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[COMMITTEE PRINT]

LONG-RANGE AGRICULTURAL POLICY

A STUDY OF
SELECTED TRENDS AND FACTORS RELATING TO THE LONG-RANGE PROSPECT FOR AMERICAN AGRICULTURE

FOR THE

COMMITTEE ON AGRICULTURE

OF THE

HOUSE OF REPRESENTATIVES
EIGHTIETH CONGRESS
SECOND SESSION

MARCH 10, 1948

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FOREWORD

The House Committee on Agriculture is nearing the completion of its study of a long-range agricultural program. Extensive hearings have been held in Washington and in the various agricultural areas of the country. Hundreds of witnesses have submitted their views on the subject, and a fund of ideas and suggestions has been accumulated which will be of great assistance to the committee.

While it is realized that no one can forsee even the immediate future with too great a degree of certainty, the committee felt that it would be helpful in its consideration of proposals for a long-time program to have before it the considered judgment of agricultural economists as to the major economic factors which may affect agricultural production, consumption, and prices for the next 25 years. With that thought in mind, the committee requested the Bureau of Agricultural Economics of the Department of Agriculture to make a thorough study of the subject. This study has now been completed and its results are embodied in the following report. I feel that the Bureau has done an excellent piece of work and I am sure the report will be most helpful to the committee. Believing that the information and analyses contained therein will be of wide general interest, the report is being printed for the use of the Congress and the public.

Clifford R. Hope,
Chairman, Committee on Agriculture.

LETTER OF TRANSMITTAL

Department of Agriculture,
Washington, March 1, 1948.

Hon. Clifford R. Hope,
Chairman, Committee on Agriculture,
House of Representatives.

Dear Mr. Hope: I am transmitting herewith a report, Agriculture Looks Ahead. This is in response to your request for a study by the Bureau of Agricultural Economics of the trends and factors relating to the long-range outlook for agriculture which might be submitted in such form as to be published as a House document.

The study speaks for itself, but there are a few observations we should like to add. These are:

(1) It is assumed that a relatively stable peace will be established. That is, we assume that there will be a gradual reestablishment of economic and political stability over most of the world, accompanied by an increasingly freer flow of both foreign trade and foreign investment.

(2) This study is not an attempt to say that something or the other is certain to happen. We know that any forecasts of the employment, price level, and foreign-trade factors are hazardous at best.

The Bureau of Agricultural Economics believes that the long-range farm outlook is relatively favorable. But there are others who are less optimistic, and we all realize that the conditions which might develop under less favorable circumstances also need to be considered. As a result, a series of alternative estimates have been worked out, including estimates based on intermediate and low-level conditions as well as a situation characterized by relatively good prices and high employment.

(3) Although the conclusion of this study is that the outlook for agriculture over the next 5 to 25 years is relatively good, this does not mean that there will be no need for an agricultural program. Rather the reverse: We assume not only continuing emphasis on better nutrition and soil conservation, but also that farmers can count on such reasonable activities in the agricultural program field as may be necessary, where and when needed.

Finally, although this study has been reviewed by several persons outside the Bureau of Agricultural Economics, we should like to say that these reviewers are in no way responsible for the conclusions reached. Among those whose comments were helpful, especial acknowledgment is due Walter W. Wilcox and a number of State experiment station and Extension Service workers, including O. B. Jesness, of the University of Minnesota; Roland R. Renne, of Montana State College; F. J. Welch, of Mississippi State College; Carroll Bottum, of Purdue University; Tyrus Timm, of Agricultural and Mechanical College of Texas; Charles M. Elkinton, of Washington State College; Morris C. Bond, of Cornell University; Miss Dorothy F. Simmons, of Iowa State College; and Miss Marjorie Luce, of the University of Vermont.

Sincerely yours,

Clinton P. Anderson, *Secretary.*

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AGRICULTURE LOOKS AHEAD

A Study of Selected Trends and Factors Relating to the Long-Range Prospect for American Agriculture

I. GENERAL REPORT

This study endeavors to analyze some of the major elements that will affect the outlook or prospect for agriculture in the United States within the next generation, assuming that a relatively stable peace is established.

SUMMARY

The next few years.—Some attention needs to be given the next few years, since events immediately ahead will also affect the longer-run prospect.

Both prices received and prices paid by farmers were at a record level through 1947. However, an adjustment in prices, which could come as a series of steps without widespread recession, is likely as more stable conditions develop. In fact, some adjustments are already under way, while within the next few years the world food shortage resulting from the war as well as most of the current accumulated deficit of durable goods in the United States itself almost certainly will have been relieved.

Even allowing for some slackening of business, as well as a reduction in foreign demand, the outlook for American farm products is relatively good for the next few years. Actual amounts of food moving abroad will depend in part upon our own foreign-aid policies, but it is assumed that a foreign-aid program will be worked out. At the same time, American farmers are in a much better financial position to absorb such shocks as may develop now than they were following World War I.

Several other factors indicate a less sharp readjustment than that following the other war. Stocks of our staple agricultural commodities are relatively low, and a reduction in acreage of some of the grain crops within the next few years would be in line with good farming practice. Meanwhile, there has already been a considerable reduction in cattle and hog numbers, so that forced liquidation of livestock is not in prospect.

All of these factors indicate that farmers are in a relatively good position to work out such adjustments as are likely to be called for in the next few years. However, prices paid by farmers for goods and services are currently running about double the average for the five prewar years, 1935–39. As a rule, these farm costs are relatively ' sticky"—that is, it is likely that farmers' cash costs will remain relatively stable. At the same time it must also be recognized that the level of nonfarm employment and incomes depends in part on how prosperous farmers are. When farm incomes rise, urban producers have a much better market for clothing, furniture, automobiles, trucks, tractors, farm machinery, fertilizers, and similar items. Good farm incomes are essential to a strong business situation.

The longer-run prospect.—Several powerful forces will continue to make for growth in the economy of the United States.

There is an excellent chance that population will continue to increase at an average rate of about 1,000,000 persons a year, so that we shall have 15 to 20 percent more producers and consumers by 1975. Moreover, advancing technology will continue to increase output per employed worker so the total real output per worker may well be one-third to one-half above the current level. As a result, assuming employment is maintained, we can expect rising real incomes and some further increases in the per capita consumption of farm products, especially food.

Agricultural production is expanding. Since 1910 farm output has increased by more than two-thirds, and this trend is expected to continue. An increase in farm output of 20 to 25 percent over the next 25 years would permit some further increase in per capita consumption of food and still leave considerable quantities of cotton, tobacco, wheat, and other crops for export. In case we should realize only intermediate or low employment, technological and other changes influencing agricultural production will come more slowly, yet even under these conditions, production probably will be great enough to maintain average per capita consumption at about the current level.

The farming community is also changing, and again the trends now under way are expected to continue. Farm population will probably continue to decline and a trend toward fewer and somewhat larger commercial farms will continue, especially if employment is maintained. The number of small-family or subsistence farms where agriculture is still the chief source of income will probably decrease, while at the same time there may be an increase in very small units that serve as a home for families whose chief source of income is from nonfarm work.

The level of living of farm people has been increasing, and this trend is also expected to continue. Progress is being made in terms of schools, roads, and living facilities generally, and within the last decade there has been a striking increase in the number of farms electrified. Stores and schools are shifting from the open country to the towns and farmers are finding it increasingly necessary to work together—participation in farm supply and marketing cooperatives, farm organizations, and similar group activities directly related to agriculture or farm life is becoming increasingly important.

In addition to the rather stable trends that have just been reviewed, there are three variable factors affecting the long-range prospect. These are (1) the level of employment, (2) the general price level, and (3) the probable strength of the foreign market.

In general it appears reasonable to expect a relatively high level of employment over the 25 years ahead. Strong forces will also be operating to hold prices generally, including prices received by farmers, well above the low level of the 1930's. Wages are almost certain to continue relatively high. Fiscal and credit policies are not likely to be so used as to unnecessarily deflate prices. Future prices are also affected to some extent by the course of prices and employment during the preceding period.

If the restrictive trends which reduced world trade in American agricultural products during the interwar years are resumed, producers of certain commodities—especially cotton, tobacco, wheat, rice, and some fruits—may again be faced with a real adjustment problem. On the other hand, world population is increasing, it is doubtful whether any great new producing areas will be opened up within the next decade or two, and American farms do have the capacity to produce substantial quantities of certain commodities for export. A good foreign market for American farm products can continue over the years ahead, provided the necessary trade arrangements are developed.

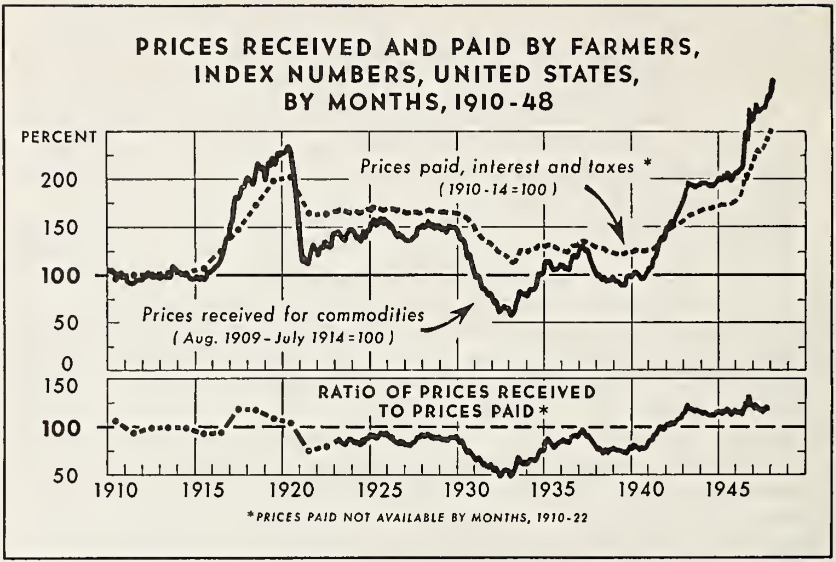
Farmers are also interested in the purchasing power of the prices they receive. With employment relatively high, the purchasing power of farm products over the years ahead could also be maintained at a relatively satisfactory level. That is, farm prices might average about "parity," as the parity level is now calculated. In case of intermediate or low-level employment, however, both farm prices and the relative purchasing power of the farmers' dollars would fall.

In summary, we believe the prospect for American agriculture over the next quarter century is relatively good. Such a conclusion can be nothing more than a statement of chances. But it does appear that the chances are that we shall be wise enough to maintain a high level of employment and of real income, and that farmers can look forward to better incomes than they had during the interwar period. At the same time, such a course of events is by no means certain. We should be prepared to take such steps as may be necessary to offset oversevere disturbances and to maintain agricultural resources adequate to provide a rising standard of living for our increasing population.

THE NEXT FEW YEARS

Several adjustments are probably ahead for American farmers during the next few years, despite forces that will tend to maintain domestic and foreign demand for United States farm commodities at a rather favorable level.

Where we now are.—Both agricultural production and demand for agricultural products increased during and following World War II. As a result, farm income was at a record high in 1947, with prices of agricultural commodities averaging about 260 percent of the prices that prevailed during the five prewar years, 1935–39, and about 18 percent above the peak prices attained in 1920 (see fig. 1).



PRICES RECEIVED AND PAID BY FARMERS, INDEX NUMBERS, UNITED STATES, BY MONTHS, 1910-48

U. S. DEPARTMENT OF AGRICULTURE NEG. 39935-X BUREAU OF AGRICULTURAL ECONOMICS

Figure 1.—During both war periods prices received by farmers went up faster and higher than did prices paid. Since 1943 prices received by farmers have been averaging 115 to 120 percent of prices paid. However, the ratio of prices received to prices paid was continuously below 100 during the interwar years. The index of prices paid, interest, and taxes is much more stable than the index of prices received.

The most important single factor accounting for the rise in farm prices during and following World War II is summarized in figure 2. In 1947, average per capital disposable income of individuals in the United States—that is, personal income less personal taxes—was about 240 percent of the average for the prewar years, 1935–39. Population also increased about 12 percent, so that the total disposable income of individuals in 1947 was actually about 265 percent of 1935–39. Consumer expenditures for food have also been increasing at about the same rate as consumer incomes, so that the change in the ratio of food expenditures to total disposable income has been relatively small.

The world needs food.—The world food economy was seriously disrupted by World War II.

In western Europe, the world's greatest food-importing area in normal times, a combination of wartime destruction and an extremely severe winter with a following drought cut bread-grain production in 1947 a third below the prewar average. Considerable increase in European grain production is probable this year, but western Europe will still need substantial grain imports, feed grains as well as wheat. Meanwhile, western Europe will perhaps not be able to obtain its full prewar volume of grain imports from eastern Europe (about 5,000,000 long tons annually) for some time, and Argentine exports are currently well below their prewar level.

Deficit areas in the Far East, including Japan, Korea, and India, will also apparently continue for a time to absorb supplies of food which in prewar times would have gone to western Europe or other markets outside the Orient. Before the war, the Far East was a net exporter of foods to the extent of 4,000,000 long tons a year but the situation is now changed, so the Far East was actually a net importer of foods to the extent of about 6,000,000 long tons in 1946–47.

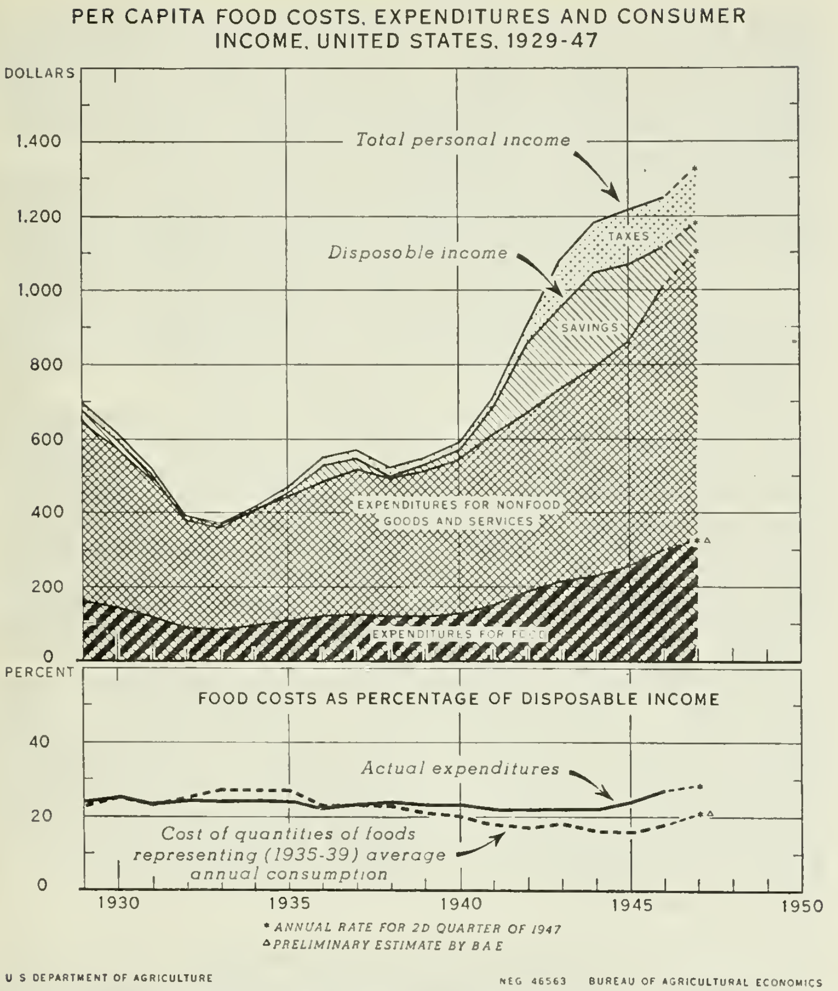


FIGURE 2.—Disposable income per capita available to American consumers in 1947 was about 240 percent of 1935–39. Consumer expenditures show a similar increase, with expenditures for food increasing at about the same rate as total disposable income from the 1930's to 1947. Annual consumer savings are now well below the wartime level.

The estimated schedule of agricultural exports from the United States which has been submitted to Congress in connection with the European recovery program calls for an export of 250,000,000 or more bushels of wheat and about 100,000,000 bushels of coarse grain annually through 1951–52, compared with exports of only slightly more than 100,000,000 bushels of all grains during the five prewar years, 1933–34, to 1937–38. These same schedules also call for somewhat greater exports of tobacco than moved before the war, considerable quantities of dried fruit, and about 3,500,000 bales of American cotton annually. This cotton estimate is well under the 5,296,000 average for 1933–34 to 1937–38, but it is about equal to 1946–47 and well above the export of 2,500,000 bales now in prospect for 1947–48.

Shipments or exports of the above magnitude would do much to maintain a good market for selected American agricultural products during the next few years, while the eventual recovery of Europe is essential for the maintenance of a desirable level of foreign trade generally over the years ahead. This does not mean, however, either that the above amounts will actually be moved or that export demand is likely to continue at the current record level. Specific foreign-aid arrangements are still to be worked out.

Meanwhile, within the United States itself we are consuming increased quantities of food, both on a per capita and a total basis. Average per capita food consumption during the last 2 years has run about 16 to 18 percent above 1935–39 and, even though some reductions in consumption of meat and other products are in prospect, food consumption in 1948 is still expected to run from 13 to 15 percent above 1935–39. It seems likely that food consumption during the next few years will not fall much if any below the level now in prospect for 1948.

The world needs other goods.—United States exports of nonagricultural goods and services have been running at a high level, as indicated by the fact that our near-record shipments of farm commodities only accounted for about one-fourth of all exports in 1947. Many countries need American industrial products, either as a basis for reconstruction or for further industrial development. Hence, although the total value of exports from the United States is expected to decline during the next few years, even if a substantial foreign-aid program is adopted, it is likely to remain relatively large and so help support consumer incomes and employment.

Within the United States itself the American people also want a great variety of capital and durable goods which they had to forego during the war, as indicated by construction activity and the fact that production of most durable goods was above or about equal to previous peacetime records in 1947. And even assuming some recession and considerable price adjustment during the next few years, it seems probable that construction and capital investment as well as the demand for durable consumer goods, especially automobiles, will continue at a good level.

SELECTED LONG-RUN TRENDS

As we look beyond the next few years, several continuing trends seem likely to be important in the economic developments of the coming quarter century or more. These are the trends or underlying factors which have already accounted for much of the Nation's growth. The more stable and important of these are:

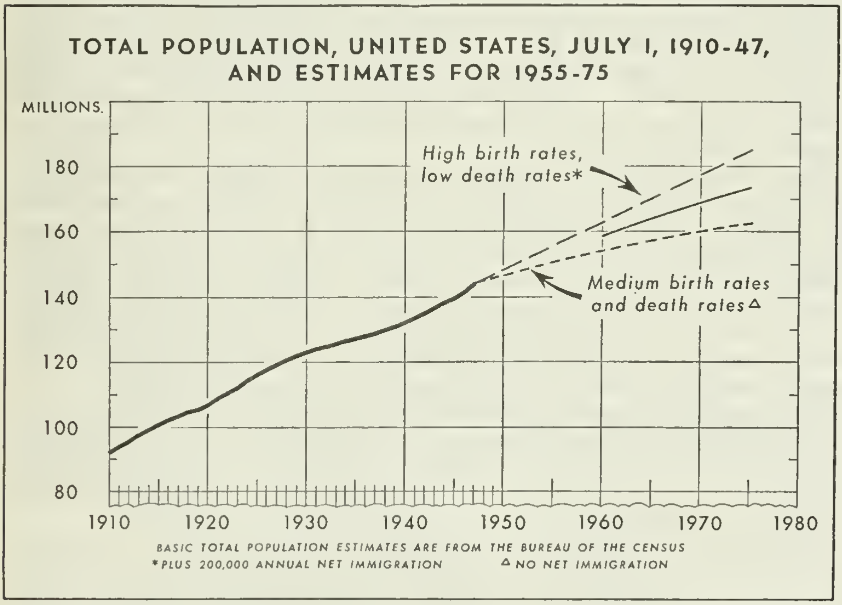
(1) Growth of the national economy generally, which gradually expands the demand for farm products. This growth stems mainly from the upward trends in population, in the labor force, and in productivity per worker.

(2) Expansion of farm production owing primarily to the steady progress of technology. This has been accompanied by the continued development of agricultural processing and distribution services which has tended to develop a relatively stable marketing charge between farmers and the consuming public.

(3) Changes in the farming community, including trends toward fewer and somewhat larger commercial farms; more part-time farms and rural residences where the main source of income is nonfarm work;

a smaller farm population and farm-labor force; the slow urbanization of rural life—that is, an increase in the variety of rural service institutions, movement of rural institutions from farm neighborhoods into villages and towns, and a gradual increase in rural levels of living.

Population.—The total population will continue to grow through 1975. This will doubtless be one of the most important single influences in increasing the domestic demand for farm products over the next three decades. The level of population at some future date cannot be forecast with precision but reasonable possibilities for 1975 range from about 162,000,000 to 185,000,000 persons, compared with a population of 144,000,000 persons as of July 1, 1947.


TOTAL POPULATION, UNITED STATES, JULY 1, 1910-47, AND ESTIMATES FOR 1955-75

BASIC TOTAL POPULATION ESTIMATES ARE FROM THE BUREAU OF THE CENSUS
*PLUS 200,000 ANNUAL NET IMMIGRATION △ NO NET IMMIGRATION

U. S. DEPARTMENT OF AGRICULTURE NEG 46615-X BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 3.—Population is still increasing and this is an important factor underlying future increases in the demand for agricultural products. The above estimates indicate the increases ahead, (1) assuming relatively high birth rates, low death rates, and some immigration, and (2) assuming medium birth and death rates and no immigration. Should population fall about halfway between these two, the indicated increase is about 10 percent from 1947 into 1960 and about 20 percent from 1947 into 1975.

In good times people are more likely to feel they can afford to have children than in less prosperous periods. It is probable that more will be spent on hospital facilities, medical care, and medical research under prosperous conditions than otherwise, and it is also probable that a more rapid decrease in death rates will result. Finally, the prospects for some population increase through immigration are greater if there is no large volume of unemployment.

A population of 174,000,000 by 1975—midway between the maximum and minimum estimates shown in figure 3—would be associated with an increase of about 10 percent in population from 1947 into 1960, and about 20 percent or 30,000,000 people from 1947 into 1975. Such a rate seems probable. However, sustained maximum employment and a general sense of economic security, together with some immigration, could lead to a population of 185,000,000 people by

1975. On the other hand, it is not likely that our population will be less than about 162,000,000 by 1975, even under conditions of intermediate or occasional low-level employment.

Labor force, production per worker, and total output.—The national labor force will increase about in proportion to population. Allowing for differences in economic conditions and population, the labor force should be larger than it was in 1947 by some 10 to 12 million workers, or by some 15 to 20 percent, by 1975.

Available data on employment and gross national product indicate that production per man-hour has increased slightly more than 2 percent per year, since 1910. Part of this increase has been offset by a reduction in the hours worked per week. Yearly output per employed worker, therefore, has probably increased at an average rate lying between 1.5 and 2 percent per year during the last 3 or 4 decades. It dropped during the 1930's, mainly because of a sharply reduced workweek. But yearly output is again increasing, and from 1942 through 1947 was again about in line with the long-time trend.

Past experience is as good a basis as is available for estimating the future trend of production per worker. With increases under favorable economic conditions at the rate of 1.5 percent per year, annual output per worker would be 20 percent higher than now by 1960, and 50 percent higher by 1975. Lower economic activity would mean a less rapid increase in annual output per worker, related to a lower rate of technological advance and a somewhat shorter workweek. But even under such conditions as these, it is probable that annual output per worker will increase about one-third by 1975.

The combined trends in productivity and labor force suggest that the total output of goods and services could well be 60 to 75 percent higher in 1975 than in 1947. When this increase is considered in terms of people, it means that our 15 to 20 percent more people could have 40 to 50 percent more real income per capita.

Agricultural production.—Agricultural production has a strong tendency to increase. Farm output has increased by more than two-thirds since 1910 and, even after allowing for favorable weather, farm output since 1942 has run 25 percent or more above the average for 1935–39. Many of the forces responsible for this upsurge will continue to operate during the next generation with the actual rate of increase depending in part upon the farmers' confidence in their future market.

Farmers will continue to shift to machine power. About 55,000,000 acres has already been released from production of feed for work stock to production of food and fiber for human use, since 1918; and in the next generation it is probable that another 15 to 20 million acres will be similarly released, mostly before 1965.

Mechanization and other technological developments have been releasing farm workers for other work for many years, and by 1975 they may reduce the number of farm workers needed by another 15 to 20 percent, despite a substantial increase in total farm output. Most of these developments have been under way for some time, but some newer developments are also under way, including some new methods of insect and weed control and an increasing interest in labor simplification and rearrangement of farm work.

Productivity of plants and animals will be further increased. The most dramatic improvement in recent years was the development of hybrid corn, but a great many others are in process of either being developed or actually put into effect. Such improvements are relatively easy for farmers to adopt as they generally do not require changes in machinery or cultural practices. New discoveries are probable as research continues—for example, the use of radioactive tracer elements offers an entirely new tool for agricultural research. Improved strains of livestock and better-balanced rations should gradually increase livestock production per breeding unit.

Other practices will also help to increase the volume and efficiency of agricultural production. Chief among these are drainage, irrigation, expanded use of soil-conserving and soil-building practices, and better forest practice on farm woodland. For the most part, developments in these fields will be relatively slow, for such developments usually require considerable capital investment.

If public development work now under way is continued and all authorized work is carried out, about 4.5 million additional acres could be brought under irrigation within the next decade. Around 8,000,000 acres probably could be improved by drainage or clearing within this time. About half of this land development would be on existing farms and half would involve development of new land. In addition to the 12.5 million acres that could be developed in the next decade, still more land could be developed by irrigation, drainage, and clearing during the years still further ahead.

In considering the effect of soil-conserving and soil-building practices, as well as the effect of bringing new land into production, it must be recognized that only meager yields are now obtained from many of our poorer farm acres while even some of the best farm lands are now overfarmed. Considerable acreages that are now being farmed need to be retired to grass or timber.

Sharp increases in crop production during recent years have been obtained partly by decreasing the soil-fertility reserve, despite the accelerated use of commercial fertilizers. Further increases in crop yields will be more difficult unless changes are made in land use and in cropping practices. Greater emphasis will need to be given to production of sod crops—high-quality hays and improved rotation pastures—together with the livestock needed for the proper utilization of increased forage.

Applications of fertilizer and lime are necessary in some areas for successful establishment of pasture and hay lands, and over wide areas these soil supplements can greatly increase the forage yields. Fertilizer is also a prime factor in increasing the production of vegetables. Use of fertilizer has more than doubled since 1935–39, and farmers are likely to continue to use, and use more profitably, at least twice as much fertilizer and several times as much lime as they did in 1935–39. If farm prices and food consumption continue at a satisfactory level, the use of fertilizer might again double by 1975.

Forest products are an important element of agricultural production. Even with good forestry, there is no possibility that the Nation's potential requirements of forest products will be met by new timber growth by 1975. Farm woodlands comprise about 30 percent of all of our commercial forest land and are indispensable to a sustained timber supply. It appears that farmers may look forward to better prices and markets for forestry products than have existed in the past, especially if we have high employment. Good forestry could eventually lead to a doubling of farm forestry output.

All of the factors mentioned above will tend to increase total agricultural production and production per farm worker, even under relatively unfavorable economic conditions. These trends would be accelerated by favorable economic conditions and, as indicated in figure 4, an increase of as much as 25 percent in total agricultural production might occur by 1975. With less favorable economic conditions agricultural production would probably still increase at about the same rate as total population.

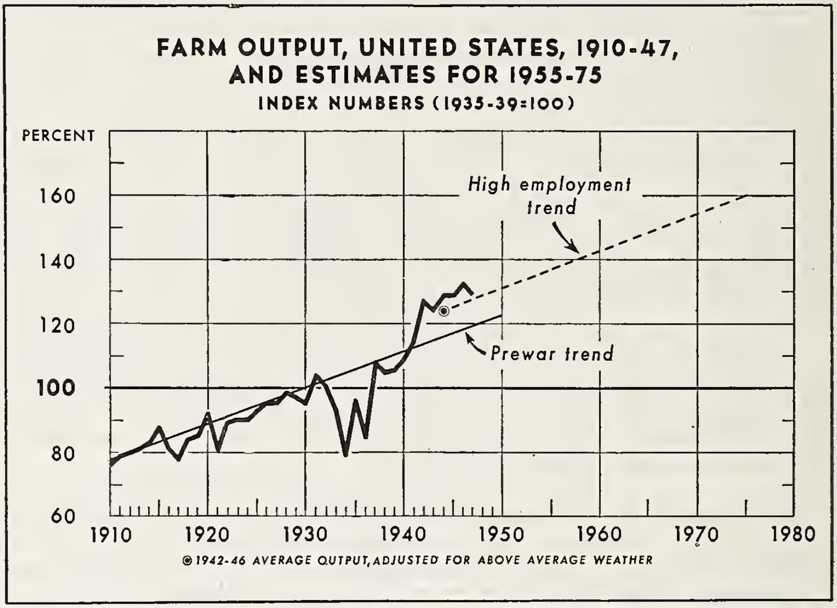


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FIGURE 4.—Farm output in the United States has increased by more than two-thirds since 1910. Farm production may be expected to continue its upward trend at about the prewar rate, although on a higher level, assuming satisfactory farm returns. This tendency to increase would still operate even under unfavorable conditions, although at a slower rate, and surplus supplies of many commodities might develop.

Trends in farm costs.—Current trends in farm costs are expected to continue. Measured in terms of resources, aggregate or total costs of agricultural production are expected to increase only moderately above current levels; that is, the over-all amounts of land, labor, and other factors used in production are not expected to change much.

However, the structure of farm costs is changing and cash costs are increasingly important. The total farm labor required for farm production is likely to continue a slow downward trend as commercial farms and mechanization increase. But this is likely to be accompanied by increasing outlays for machinery and equipment. Cash outlay for fertilizer probably will become more and more important, and interest and taxes are likely to increase. The same will be true for cash expenditures for farm family living, as farm ways of living are increasingly urbanized.

Trends in marketing costs.—Wages and salaries are the most important item in the cost of marketing agricultural commodities and their products, directly accounting for about one-half of the total marketing bill. Changes in the efficiency of marketing organization and practices and the trend toward increasing marketing services are also important. Since all three of these are relatively stable factors, changes in the percentage of the consumers' dollar that has gone to farmers over the last 35 years have been closely associated with changes in the farm price level.

Increasing attention is being paid by research and service agencies to marketing problems, at both the State and national level, and a broad program of marketing research and education is now getting under way. Progress in this direction will reflect favorably upon the demand for farm products. But lowering marketing costs is a difficult task. Wage rates are especially resistant to downward pressures, so reductions must come chiefly through increasing efficiency. This calls for better organization and equipment. At the same time the services rendered by the marketing system also affect costs, and it is doubtful whether the trend toward an increase in marketing services will be reversed under conditions of high employment. Therefore, the relationships shown in figure 5 should indicate fairly well what farmers may expect for some time ahead.

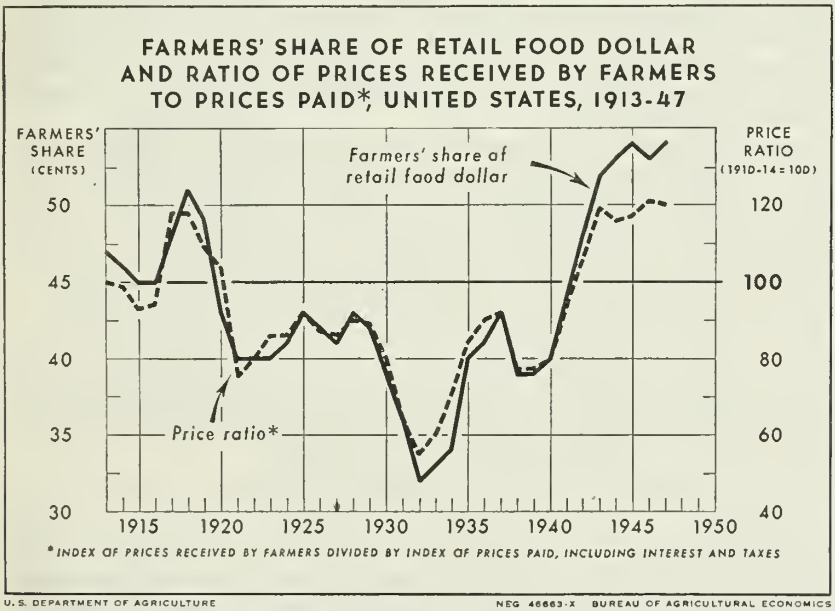

FIGURE 5.—Farmers have received all the way from 32 to 54 cents out of each average dollar spent for food at retail over the last 35 years, with returns running as high as 45 cents only in the most prosperous years. Marketing costs are relatively stable, so that the farmers' share of the retail dollar is closely associated with prices received for farm products, especially with the ratio between prices received and prices paid

Food consumption.—The future demand for food within the United States itself will chiefly determine whether a satisfactory market can be maintained for the increasing quantities of foodstuffs that are likely to be produced. It appears that demand will be strong enough to absorb these increasing quantities of food at prices relatively favorable to farmers, if we have high employment; but that supplies are almost certain to press on the market if we have intermediate or low-level employment.

Per capita food consumption has increased during the last few years, averaging about 16 percent above the prewar level in 1947. This rise has been supported by the general increase in consumer purchasing power since 1939, especially by the marked improvement in the income and purchasing power of the lower-income families. Scarce supplies of durable consumer goods such as automobiles and new houses may also have been a contributing factor. However, substantial declines in food consumption are not expected even under relatively unfavorable conditions while per capita consumption should further increase if consumer incomes and employment are well maintained, perhaps to about 20 percent above 1935–39 by 1960; and to as much as 25 percent above by 1975.

In general, it may be expected that prewar trends in the consumption of individual commodities will be resumed, although they may be somewhat less pronounced (fig. 6). The upward trend in consumption of fruits and vegetables (excluding potatoes and legumes) is likely to continue but at a slower rate. The demand for meats and whole-milk dairy products should continue high, depending considerably on consumer incomes and employment. Little change is expected in the average per capita consumption of cereal products, potatoes, and sweetpotatoes; and, although consumption rates for fats and oils (including butter) and sugar are likely to be above recent years when supplies have been low, they are not expected to rise much above the prewar level.

Farm population.—In contrast with an increasing total population in the United States, farm population is expected to decline. The number of farm people has generally trended downward over the last three decades at an average rate of about one-half percent per year. A continuation of this rate would lead to a farm population in 1960 of approximately 26 million and in 1975 of approximately 24 million—about 13 percent under the current estimate of about 27.5 million.

Fewer farm workers are likely to be needed as mechanization continues, with the average size of commercial farms increasing at the same time as many farm families shift from small-scale relatively inefficient farms to cities. On the other hand, some offsetting increase in the number of nonagricultural workers living on small farms and classified as part-time operators is also expected.

In any given year the farm population might be above or below the expected trend. As births greatly exceed deaths among farm people, the expected decrease of about one-half percent, or 125,000 persons, per year, would involve an average net annual movement from farms of 400,000 to 500,000 people. This is somewhat smaller than the actual average net movement in 1920–29 and 1935–39. However, the slowing down of normal migration from farms to towns and cities during 1930–33 led to a rise of nearly 2,000,000 persons in the farm population. A severe depression at some future date might well have a similar effect. The chances of farm population falling under the indicated trend are perhaps small, but even this could happen as the result of several years of continuing maximum employment.

Farm size and ownership.—Mechanization and other technical developments have allowed both the average acreage and output of commercial farms to increase in recent years, even though the actual number of such farms was being reduced. Meanwhile, part-time farming has increased the number of farms of less than 10 acres, especially farm residences where the chief source of income is from nonagricultural work. These trends are expected to continue, especially if relatively high employment is maintained.

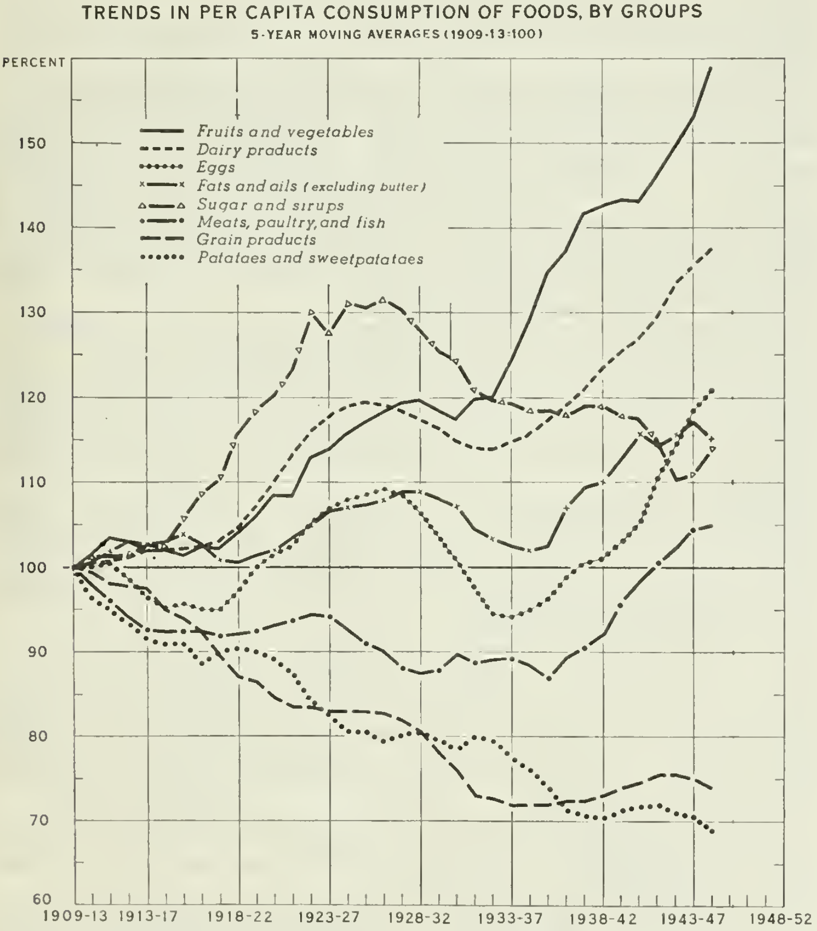

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FIGURE 6.—Significant trends in the average per capita consumption of selected foods have been under way over the last four decades. Current trends are expected to continue; that is, consumption of fruits and vegetables and dairy products is likely to continue to increase but at a slower rate, consumption of grain products and potatoes is likely to remain at about the current level, while consumption of meats is expected to continue high if incomes and employment remain relatively high.

According to the census there were approximately 5,850,000 farms in the United States in 1945. About 100,000 farms were large-scale units having a gross value of product of more than $20,000 in 1944. These farms accounted for about 22 percent of the gross value of all farm products. Almost 3,250,000 farms were family units with a gross value of production ranging from $1,200 to $20,000 in 1944.

These family-size farms accounted for about 55 percent of all farms and a little over 70 percent of the gross value of all farm products. In addition to these two classes of commercial farms there were approximately 2,500,000 small-scale units, accounting for about 43 percent of all farms but only about 8 percent of the gross value of all farm products. These small-scale units included small holdings where farming was the chief source of income, part-time farms where the chief source of income was usually nonfarm work, and rural or residential retirement units where the operator was often more than 65 years old.

The number of farms operated by full owners increased from 46 to 56 percent of all farms from 1930 to 1945, but virtually all of this increase occurred on farms of less than 50 acres. There is likely to be a further increase in ownership on small farms especially under conditions of prosperity. However, increasing capital requirements for commercial farming will continue to act as a deterrent to operator-ownership of larger farms even under prosperous conditions, while under less prosperous conditions relatively high capital requirements could lead to an over-all reduction in farm ownership.

Part-time farming.—About 50 percent more farm operators reported 100 days of work off their farms in 1944 than in 1929.

As already indicated, many farm families will probably shift completely to nonfarm work during prosperous periods, while further increases in part-time farming may also occur. As a result, it becomes a matter of considerable interest as to where such nonfarm work may be located.

Analysis of industrial trends over the last several decades shows some gradual but significant regional shifts. Between 1899 and 1939 the South's share of the Nation's manufacturing wage earners increased from 16 to 21 percent and the Pacific coast's share increased from around 2½ to 5½ percent.

An increasing industrialization of the South would enable many farm people to find nonfarm employment without moving long distances across the country, or perhaps even without leaving their present farm homes. It would also stimulate the production of fluid milk, vegetables, and poultry products near the growing business and industrial centers. Increasing industrialization on the Pacific coast will also have this same effect.

Levels of living and rural organization.—Farm family levels of living have improved considerably within the last 25 years, and further improvement is expected.

More and more farm families have automobiles, radios, electricity, refrigeration, and running water. As a rule these facilities are much more generally available on large farms than on small farms and are much more common in the Northeast, the Midwest, and the Pacific coast than in the South. Accurate measures of the relative level of education, health, and welfare services available to farm as compared with nonfarm families are lacking. There are enough data available to clearly indicate, however, that farm levels are still significantly under the average nonfarm level.

The number of organizations and agencies serving farm people has steadily increased. As our economic life becomes more and more complex, farmers find it increasingly necessary to work together; and this, along with a shift of schools, churches, and service agencies generally from open country into villages and towns, has been the chief trend in the field of rural organization. Farmer cooperatives and farm organizations are found in almost every county, while county agencies, committees, and governmental functions at the county level are becoming increasingly important.

MAJOR VARIABLE FACTORS

The trends so far considered have been relatively stable, and within a reasonable range they can be used as a basis for forecasting the future. But there are three additional factors—employment, the general price level, and foreign demand—which cannot be so easily appraised. These factors must be considered briefly as a basis for discussing the different economic situations which might develop.

Employment.—The expansion of our total labor force means a potential expansion in the level of employment.

Employment has fluctuated from as low as 75 percent in 1933 to well over 95 percent of the labor force in 1929 and again during World War II. Meanwhile, the recent war and postwar years have made the American people aware of what high employment means. Moreover, they have placed new responsibilities for world leadership on the United States. As a result, levels of employment as low as those of the 1930's do not now seem likely to recur even though we may not foresee at particular times all the specific adjustments required to maintain maximum employment.

General price level.—The complex factors that influence the general price level likewise affect farm prices. Figure 7 shows the course of farm and nonfarm prices at wholesale over the last century and a half

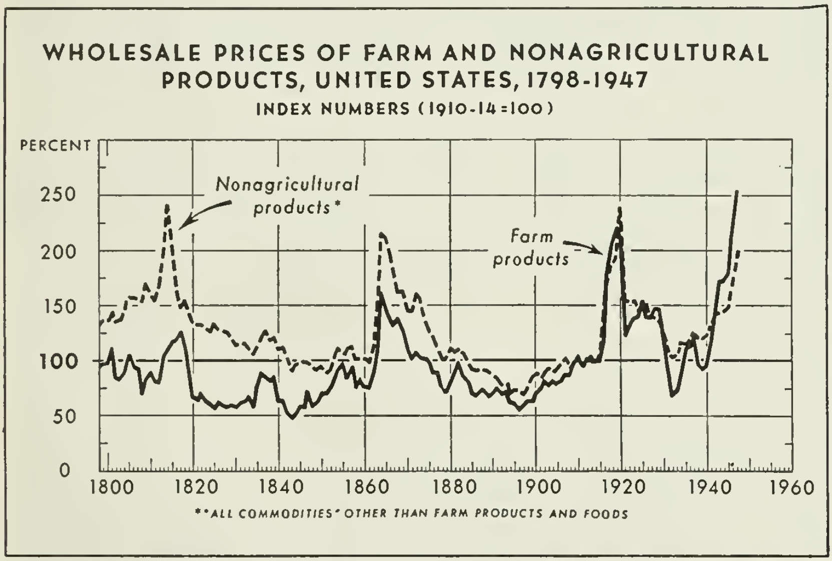

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FIGURE 7.—Wholesale prices are now in their fourth great inflationary period. War and heavy Government spending have accompanied each of these peaks. Inflationary pressures were partially checked during World War II by control measures, but wholesale prices of both farm and nonfarm products rose sharply during 1947. Prices of farm products have tended to rise relative to nonfarm prices, except during the last interwar period.

Prices of farm products have been generally more variable than prices of nonagricultural products. Average prices received by farmers, for example, fell by more than 50 percent within 12 months from May 1920 to May 1921; and in 1947 were about four times the low figures recorded in 1932. Prices of goods purchased at retail and prices paid by farmers generally are less variable than wholesale prices, but retail prices in 1947 were more than 70 percent above 1932, while prices paid by farmers had about doubled.

The future course of prices will be strongly influenced by both the stability and average level of the volume of employment. Monetary and credit policies will also affect the price level, often in ways that are difficult to measure. Increases in labor productivity can be translated into higher wage rates and profits with constant prices, or into constant wage rates and profits with declining prices, or into some combination thereof. The foreign-trade factor must also be considered.

Several factors indicate that prices may not again work down to the extremely low level of the 1930's. The increasing unionization of labor and minimum-wage laws will hinder a downward movement of wages, even on the downswing or at the bottom of a business cycle. At the same time, fiscal and credit policies are not likely to be so used as to unnecessarily deflate prices. It is also a fact that the course of prices over several years is often influenced considerably by the initial price level. For example, despite the very sharp decline shortly following World War I, wholesale prices generally did level off and hold at 140 to 150 percent of the prewar level until 1929.

Agricultural exports.—Cotton, wheat, and tobacco made up about two-thirds of the dollar value of agricultural exports in every 5-year period from 1910 to 1940, with the exception of the World War I period. Producers of these commodities will need an export market and this is also true with respect to rice and several fruits, including apples, citrus, and dried fruits. Europe has been our best customer, taking about two-thirds of total agricultural exports during the interwar period.

For as long as statistics are available, agricultural exports have been declining relative to total exports, to national income, and to farm cash receipts. From 1919 to 1939 there was a declining trend in the physical volume of exports of such major commodities as cotton, tobacco, and wheat. Fruit was the only major commodity group for which exports went upward during this period.

Agricultural exports from the United States over the next quarter century will be influenced by our own policies as well as those of other countries. If we are to export considerable quantities of commodities, agricultural and other, we must also import, for this is the eventual means of paying for a larger volume of United States exports. Our willingness to accept imports is likely to depend chiefly upon the prevailing level of income and employment.

Success or failure of economic recovery in Europe, including resumption of substantial industrial exports, will be crucial in determining the ability of European countries to buy our agricultural products. The extent to which western Europe will again obtain supplies of food and agricultural raw materials from traditional sources outside the

Americas, especially from eastern Europe and the Far East, will also affect our exports. Unless food exports from these areas are restored to prewar levels, alternative sources of supplies will be needed.

We cannot be sure of the future of our foreign trade in agricultural products. If the restrictive trends that were under way into 1935–39 are resumed, exports of our agricultural products over much of the next 25 years might be small. Cotton exports, for example, might not be more than 2 to 3 million bales annually, wheat around 100,000,000 bushels, and tobacco less than 400,000,000 pounds. Exports of other commodities would also tend to fall.

On the other hand, if the total volume of international trade can be maintained at a reasonable level and if western Europe is again able to rely on overseas areas for foods and raw materials, the outlook for United States exports can be much more favorable. The world needs food, cotton, and tobacco if prewar consumption standards are to be restored. Exports of 200 or more million bushels of wheat, some 550 to 600 million pounds of tobacco, and as much as 4 to 5 million bales of cotton annually would be fully consistent with foreign needs as well as with our capacity for economic production. Considerable quantities of rice, fruit, and other farm commodities can also be advantageously exported.

ALTERNATIVE COURSES

To illustrate the range of conditions that farmers may face in the future, a series of alternative estimates relating to income, employment, and prices is presented in table 1. These estimates are not specific forecasts; rather the emphasis is upon the relative differences in prices, income, etc., which would exist under the different economic situations that could develop in the decade centering around 1960.

The estimates cover three different situations. One series relates to intermediate conditions, which in effect assume about the same situation as existed during the inter-war years, with conditions in different years ranging all the way from relatively high employment to severe depression. Estimates relating to this possible depression are presented as a special case of what might develop under an unstable or intermediate situation. And, finally, a third set of estimates relates to conditions which we believe are perhaps most likely—a situation characterized by relatively high employment over most of the years ahead with unemployment occasionally running as high as 10 percent.

Intermediate employment.—If the economy performs about as it did during the inter-war period, although with somewhat less extreme fluctuations, employment much of the time would be intermediate between severe depression and full employment. In terms of future size of the labor force, unemployment might average about 8,000,000, ranging from as few as 4,000,000 to as many as 13,000,000. Wholesale prices, consumer (retail) prices, and farm prices during 1955–65 would all probably average somewhere above the level that prevailed during the immediate prewar years, 1935–39.

TABLE 1.—*Employment, income, and prices, 1935–39 average and 1947, and estimates illustrating relative situations that might exist about 1955–65 under different assumptions*

Series	Unit or base	1935–39 average	1947 preliminary	Alternative situations, 1955–65		
				High employment (approximate)	Intermediate employment (approximate)	
					Average level	Depression
Gross national product	Billion dollars	84.0	231.8	265	205	165
Disposable income	do	66.2	175.6	200	155	130
Total population	Million	129.0	144.0	158	154	154
Total labor force	do	54.3	61.6	66	66	66
Employment	do	44.9	59.5	62	58	53
Unemployment	do	9.4	2.1	4	8	13
Consumer prices	1935–39=100	100	159	145	125	115
Wholesale prices	1926=100	81	152	125	105	85
Farm output	1935–39=100	100	129	143	[1] 138	[1] 133
Food consumption per capita	do	100	116	121	115	110
Prices received by farmers	1910–14=100	107	278	200	150	100
Prices paid by farmers [2]	do	128	231	200	175	150
Ratio of prices received to prices paid [2]	do	84	120	100	85	67
Cash receipts from farm marketings	Billion dollars	8.0	30.0	23	17	11
Realized net income of farm operators	do	[4] 4.8	[4] 18.0	14	9	6
Net farm income to all farm people [3]	do	[4] 5.4	[4] 20.0	16	11	7

[1] Probably exceeds, by relatively small amounts, quantities that could be marketed through normal channels at the relative price levels specified.

[2] Index of prices and rates paid by farmers including allowance for interest and taxes.

[3] Net income to all farm people, including farm laborers living on farms, accruing from agriculture. Includes value of farm products consumed in the farm household and the rental value of the farm dwelling.

[4] Includes Government payments.

This intermediate pattern of employment and prices would affect some of the more stable trends discussed earlier. Population would increase less rapidly and would perhaps be less than 15 percent above 1947, or around 160 to 165 million, by 1975. Production per worker might increase by only 1 percent a year if there were a constant pressure to shorten working hours and spread employment. Therefore, annual output per employed worker might not increase more than one-third between 1947 and 1975.

Agricultural production would expand somewhat less rapidly than it did from 1910 through 1941; and farmers would have less incentive, and less funds, to buy fertilizer and farm machinery or to make capital improvements, than under more favorable circumstances. An intermediate employment situation would also tend to reduce United States foreign trade, and it is probable that surplus supplies of many agricultural products would often exert a strong downward pressure on the domestic market. Average per capita food consumption would probably be maintained at about the current level.

The movement of young people and small operators from farms would be retarded if we had recurrent periods of severe unemployment; and the number of persons on farms would be higher than under prosperous conditions, though many of them might be underemployed. The smaller farms would suffer the most but such a situation would affect levels of living even on the larger commercial farms. Improvements in public facilities would probably be retarded in areas that are already seriously disadvantaged.

Farm income during the 1955–65 decade would average well below the 1947 level and perhaps about the same as in 1942. In particular years, however, farm income might be very much below or very much above this level. Prices paid by farmers for commodities used in production and farm family living might average perhaps 25 percent lower than in 1947, whereas prices received by farmers for their products might not run much more than half of the 1947 level. In particular years, farm prices might range anywhere from the 1935–39 average to a level somewhat higher than in 1942. Farm prices might approach parity from time to time, but it is doubtful that they would average more than about 85 percent of parity as now calculated.

Agriculture would be faced with much the same set of problems as in most of the interwar period. The growth of population and national production would help to maintain real farm incomes and to increase slowly the actual quantities of agricultural products that could be moved—that is, the actual purchasing power of persons on farms might, as of 1960, be only about 25 percent lower than in 1947 and well above that prevailing in the years before 1942.

It would be misleading to discuss the effects of this situation on farm prices and incomes and on the economy generally without calling attention to the fluctuations that would be associated with it. Such an intermediate situation as is now being discussed would be essentially unstable. There would be some really prosperous years, but a severe depression could also develop.

Severe depression.—The deflationary possibilities of a severe depression are thoroughly shocking. The last column of table 1 illustrates about the situation that might be expected if as many as 13 million workers were unemployed, or about 20 percent of the labor force as compared with the 25 percent unemployed in 1933.

As a consequence of such a depression, prices received by farmers might well fall to about 100 percent of the 1910–14 level, compared with the 278 percent average for 1947. Prices of the several commodities would drop by somewhat different percentages, of course, and some of them might well be under the prices that prevailed in 1910–14 or 1935–39. Cash receipts from farm marketings might shrink to 10 or 12 billion dollars, compared with about 30 billion in 1947. Surplus supplies would certainly develop and it is doubtful whether agricultural production could be restricted to the demand that would exist at prices that the farmers would consider at all satisfactory. As a result, the estimates do not indicate a great decrease in average per capita food consumption, but it is certain that many families would not have the money to buy an adequate diet, except as it might be provided through a supplementary food program or by means of direct relief.

High employment.—Continuing high employment over the next 25 years would maintain the more stable growth trends discussed earlier.

Population would increase more rapidly than otherwise, resulting in a total population perhaps 20 percent greater than in 1947, or around 174,000,000 by 1975. The labor force would probably expand by about the same percentage, and production per worker might well increase at least 1½ percent a year because of the more rapid accumulation of capital and an economic climate favorable to technological improvements. Output per employed worker might increase as much as 50 percent from 1947 to 1975, and under these conditions the total national product in real terms would be about 75 percent higher than at present.

Disposable personal income measured in real terms—that is, after allowing for changes in the value of the dollar—under the several sets of conditions that have been discussed, is shown in figure 8.

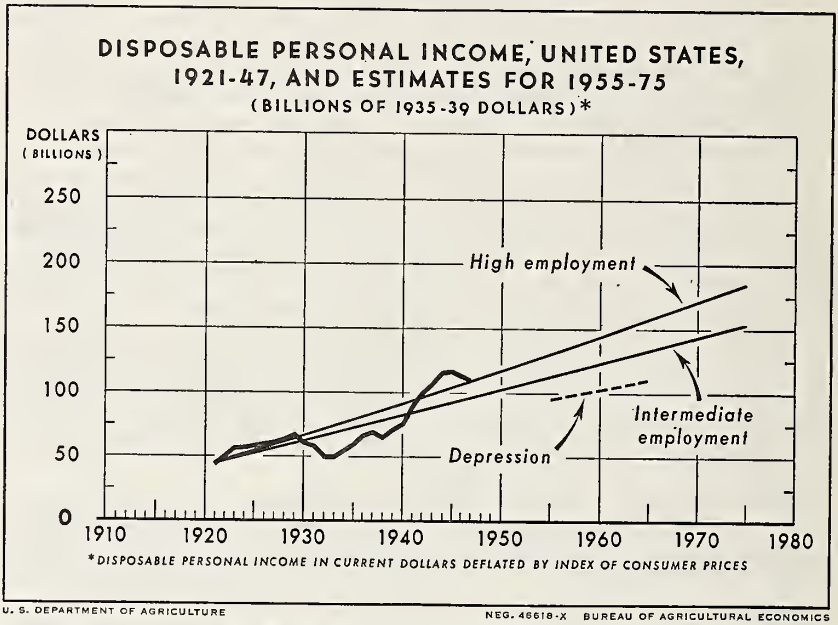

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FIGURE 8.—With relatively high employment a steady increase could be expected in disposable personal income measured in real terms, over the coming years. Severe depression would break income sharply down, of course, but even under conditions of intermediate employment, the growth factors in the American economy appear to be strong enough to support a gradual upward trend.

Agricultural production would probably increase from the current level about in line with the prewar trend. The index of farm output might rise to about 143 by 1960 and about 160 by 1975, compared with the index of 129 for 1947. This rise would be obtained through increased application of lime and fertilizer, more rapid introduction of farm machinery, and a generally more rapid adoption of improved farming practices, drainage, and irrigation. Per capita income should be high enough to encourage some increase in per capita consumption of food which might be about 20 percent above the 1935–39 level by 1960, and perhaps as much as 25 percent above by 1975.

It is probable that farm population would continue to decline about in accordance with the trend of the last 30 years, or at an annual rate of about one-half percent. Except during brief periods of recession it would be relatively easy for most of the farm youth who are not needed on farms to find other part-time and full-time work. Operators of farms that were too small to provide adequate family income would have similar opportunities to find nonfarm work, but even under these conditions the movement away from farms in some of the poorer areas would be slow. The trends toward increased sizes and reduced numbers of commercial farms would be accelerated. Conditions would be favorable to a gradual increase in the level of farm living with respect both to those elements that the farm family can buy itself and to those that must be obtained by community effort.

Even under these conditions of high employment a considerable readjustment in the average level of farm prices is indicated. But the relationships on which the estimates in table 1 are based indicate that average farm income should still run two to three times prewar, with farm prices generally averaging about parity—that is, the ratio of prices farmers receive to prices they pay would be about equal to the average for 1910–14. Variations in production from year to year would still cause substantial fluctuations in individual commodity prices and would offer some real problems, especially in years when high yields might coincide with some increase in unemployment.

On the average, however, the outlook for the feed crops and livestock—commodities which ordinarily account for over 60 percent of the farmers' cash sales—would be relatively favorable under conditions of high employment. The outlook for vegetables and the fruits that are consumed chiefly within the United States would be good, but perhaps not quite so favorable as the outlook for the feed grains and livestock. Production of vegetables, especially, can be increased over a relatively short period whenever demand is strong while current tree numbers, except possibly for apples, are sufficient to meet probable increases in demand for several years ahead.

The general outlook for cotton, wheat, tobacco, rice, apples, citrus, and dried fruit would still depend considerably upon the foreign situation. High employment at home would strengthen the demand for these commodities and help toward solving some of our problems in foreign trade. But producers of these commodities would find themselves in a difficult situation unless considerable quantities were exported. However, any shifts or adjustments that would have to be made would be much less drastic than otherwise, as well as much easier to induce, if farmers generally had a steadily expanding domestic market.

II. SUPPLEMENTARY STATEMENTS

POPULATION

Total population will probably increase about a million persons a year on the average and by 1975 may be 20 percent higher than at present, given reasonably prosperous conditions. Sustained maximum employment could lead to a more rapid growth, while a widely fluctuating employment pattern like that of 1921–41 would lead to a slower, but still significant, growth.

Farm population is expected to decline gradually as it has during the past three decades, and may be about 24,000,000 in 1975 compared with 27,500,000 now. A severe depression, however, could temporarily raise farm population as much as 2,000,000 above this trend.

Outlook for total population

Population growth will be the most important single factor tending to expand the market for farm products during the next 25 years. Forecasts of the future population of the United States have been developed by the Scripps Foundation and the Bureau of the Census (table 2). These forecasts were made on the basis of trends in birth rates among women in each color, nativity, and age group and trends in death rates among each color, nativity, age, and sex group in the population. High, medium, and low trends in the birth and death rates were used in deriving alternative population forecasts.

TABLE 2.—*Forecasts of the total population of the United States, 1950–75*

Year (July 1)	High fertility, low mortality [1]		Medium fertility medium mortality, no net foreign immigration
	With 200,000 annual net foreign immigration	With no net foreign immigration	
1945	139,586,000	139,586,000	139,586,000
1947	144,002,000	144,002,000	144,002,000
1950	148,700,000	148,058,000	147,081,000
1955	155,697,000	153,827,000	151,137,000
1960	162,440,000	159.202,000	154,348,000
1965	169,556,000	164,863,000	157,341,000
1970	177,261,000	171,059,000	160,171,000
1975	185,071,000	177,304,000	162,337,000

[1] "Fertility" refers to the set of specific birth rates among women in each 5-year age group. "Mortality" refers to the set of specific death rates for each age and sex group of the population.

Source: Estimates for 1945 and 1947 from Bureau of the Census, Current Population Reports, Series P–25, No. 3. Basic projections for 1950 and subsequent dates were developed cooperatively by the Scripps Foundation and the Bureau of the Census and appear in Forecasts of the Population of the United States, 1945–75, issued by the Bureau of the Census. Minor adjustments have been made in the basic projections to allow for the greater than projected increase between July 1945 and July 1947. These adjustments amounted in 1947 to approximately 0.8 million for the first column of projects shown above, 1.2 million for the second column, and 1.8 million for the third column and in each case the adjustment was graduated to zero in 1975.

All the forecasts regarding future trends in birth rates assume a drop from the high rates of recent years. The high forecast assumes that birth rates among native white women in the United States will decline to the 1935–44 average rate and will fluctuate around this point. The medium forecast assumes that birth rates will decline throughout this century to a level equal to that which prevailed in 1939–41 among women in the New England States—an area of relatively low birth rates, though not so low as in the Middle Atlantic States. The high birth rate assumption implies a continuously increasing population, while the medium assumption implies a gradually decreasing population after about 1990 if there is no immigration. Forecasts were also made on the basis of a low birth rate assumption, but these do not appear to be consistent with probable economic conditions.

All assumptions as to death rates imply some increase in the average length of life. The different death rates assumed would not result in nearly so great a range in total population as would the different birth rates. Approximately 71 percent of the difference in the 1975 forecasts shown in the second and third columns of table 2 is due to different assumptions regarding birth rates and only 29 percent to different assumptions as to death rates. The effect of the different death rate assumptions can be illustrated in the case of white males. In 1940–44, the average expectation of life, at birth, for white males in the United States was 63.3 years. Under the high death rate assumption, the average expectation would be increased to 66.0 years by 1975, under the medium assumption to 67.8 years, and under the low assumption to 70.7 years.

There is little doubt that the population of the United States in 1975 will be larger if relatively favorable economic conditions prevail, than if employment follows the interwar pattern. People are more likely, in good times, to feel they can afford to have children. An increasing proportion of families in the United States are planning the births of their children and can postpone or prevent births if they do not feel they can afford additional children. Moreover, it is probable that more will be spent on hospital facilities, medical care, and medical research, if a high level of national income is maintained over the next 30 years, than otherwise. This would tend to make the lower projections of death rates more likely. Finally, the prospects for some population increase through foreign immigration will be greater if there is but little unemployment.

The growth of the population in the United States in the next 25 years will be affected by other factors in addition to economic conditions. For example, the nature and adequacy of social security and similar legislation might affect the pattern of family size in the United States, by providing or failing to provide a sense of general economic security among the population. Neither these nor other possible developments can be predicted solely on the basis of economic assumptions.

Forecasts are not available for the population of the United States by major geographic divisions. If the differential rates of growth since 1910 offer any clue to the future, the Pacific States will have the highest rates of growth and the West North Central and East South Central the lowest. Migration during World War II was mainly from the interior of the country to areas on the Pacific coast, around the Great Lakes, and along the eastern seaboard. Perhaps the greatest unknown factor that will affect regional distribution of the population of the United States in 1975 will be the rate of industrialization in the South. This in turn will determine whether the major part of its natural increase in population will be retained within the region or will migrate to other areas for employment.

Outlook for farm population

The downward trend in the number of people living on farms is expected to continue. Farm population is estimated currently at about 27.5 million compared with 32.5 million on January 1, 1916 (fig 9).

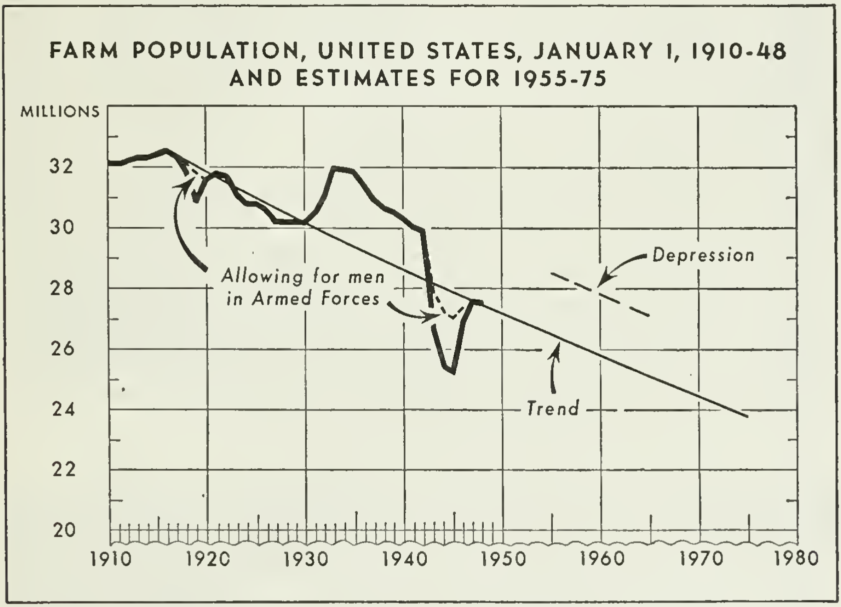

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FIGURE 9.—World War 1 represented a turning point in the course of farm population in the United States; the trend in the number of persons living on farms has been generally downward since 1916. The decline was heavier during the two World Wars and was interrupted for a few years by the depression in the early 1930's, but the average rate of decrease from 1916 to 1948 was about one-half of 1 percent per year.

Migration from farms to cities has normally drained off the farm workers released by increased efficiency of farm production, as well as the farm youth in excess of replacement needs. When times were good and nonfarm jobs easy to find, they left farms in great numbers, averaging over 600,000 a year net migration in the 1920 decade. When the depression came and jobs in cities were hard to get, this rate was cut sharply; in 1932, fewer people moved away from farms than to farms. Slowing down of normal migration from farms led to a rise in the farm population of nearly 2 million, between 1930 and 1933. Because of this damming up of persons on farms in excess of the number needed, migration response to even the limited degree of economic recovery in 1935–39 was marked; it averaged around 500,000 a year. But it was not until the manpower demands of World War II had been effective for several years that the farm population was reduced to the level it would have reached had the 1916–30 trend continued without the interruption by the depression.

Developments in roads and in transportation facilities that make it possible to live on farms and commute to jobs in town have affected the size of the farm population in the past 15 years. Between 1930 and 1946, the proportion of workers living on farms who were employed in nonfarm jobs more than doubled, increasing from 14 to 29 percent. In some cases, commuting to a nonfarm job prevented migration from the farm, and in others it brought migrants into the farm population from towns or cities. War and postwar demands for manpower and the housing shortages in cities have increased the proportion of farm residents employed in nonfarm jobs since 1940. Many of this group are not operating farms themselves, but are living in second or third dwellings on the farm that may formerly have been occupied by hired workers or tenants.

It seems reasonable to expect that both increasing output per worker and increasing employment of farm people in nonfarm jobs will continue to affect the total number of people living on farms during the next generation. Further mechanization and other advances in agricultural technology will undoubtedly reduce farm-labor requirements and the number of workers in agriculture. Under good or fairly good economic conditions, migration from farms both of these displaced workers and of many of the young people reaching working age will reduce the number of people living on farms. On the other hand, there may be a continuation of the increase in the number of farm residents who are engaged in nonfarm work that will retard the decrease in farm population to some extent.

In the projections of the farm population of the United States shown in table 3, it has been assumed that the net effect of these factors will be to produce an average rate of decline of about one-half of 1 percent per year—the average rate that prevailed between 1916 and 1948. The actual rate may, of course, differ from this. If high levels of employment and income were to be maintained virtually steadily until 1975, farm population at that time might be even less than the figure projected. If a serious depression should occur, a higher level could be expected.

Because of the large excess of births over deaths among farm people a reduction of 0.5 percent (120,000 to 140,000 persons) a year in the farm population would imply an average net movement from farm to nonfarm residences of 400,000 to 500,000 persons yearly. This means that farming communities will rear and educate many young people whose productive years will be spent off the farm, and that urban communities have a direct interest in the opportunities for education available to farm boys and girls. It is important that the quality of education and training provided in farming areas enable farm youth to adjust successfully to the requirements of nonfarm working and living.

TABLE 3.—*Farm population of the United States, 1910–48, and tentative estimates for 1955–75*

Year	Population living on farms in January	Year	Population living on farms in January
1910	[1] 32,076,960	1932	31,028,000
1911	32,110,000	1933	32,033,000
1912	32,210,000	1934	31,945,000
1913	32,270,000	1935	[2] 31,800,907
1914	32,320,000	1936	31,377,000
1915	32,440,000	1937	30,906,000
1916	32,530,000	1938	30,620,000
1917	32,340,000	1939	30,480,000
1918	31,770,000	1940	30,269,000
1919	30,930,000	1941	29,988,000
1920	[2] 31,614,269	1942	29,048,000
1921	31,763,000	1943	26,659,000
1922	31,749,000	1944	[3] 25,521,000
1923	31,130,000	1945	[3] 25,190,000
1924	30,817,000	1946	[3] 26,850,000
1925	30,830,000	1947	[3] 27,550,000
1926	30,619,000	1948	[4] 27,500,000
1927	30,170,000		
1928	30,188,000	1955	[5] 26,500,000
1929	30,220,000	1965	[5] 25,100,000
1930	30,169,000	1975	[5] 23,800,000
1931	30,485,000		

[1] Estimated, U. S. Bureau of the Census.

[2] Enumerated, U. S. Bureau of the Census.

[3] Estimated cooperatively by Bureau of the Census and Bureau of Agricultural Economics.

[4] Preliminary estimate, subject to revision. Based on preliminary results from the Bureau of the Census monthly cross-section survey of population in December 1947.

[5] Based on assumption that the farm population after January 1948 will resume its average annual rate of decline that prevailed during 1916–48, an average decrease of 0.53 percent per year.

Source: Estimates of the Bureau of Agricultural Economics unless otherwise indicated.

EMPLOYMENT, INCOME, AND PRICES

Over the next 25 years the labor force will continue to grow and production per employed worker will increase. Table 4 illustrates the range of situations that could occur at almost any future time, although the figures for the population and labor force are appropriate for about 1960.

If we maintain a relatively high and stable level of employment, the expected growth in labor force and production per worker would lead to an increase of about 25 percent in total real income by 1960 and as much as 75 percent by 1975. As a result, demand would apparently increase fast enough in relation to available supplies of farm products to maintain the general level of prices received by farmers about at parity (as now calculated), although prices of individual farm products would have different trends and would fluctuate considerably from year to year. Real purchasing power per person on farms in 1960 would be about twice as high as in 1935–39 and only moderately below the level of 1947.

If the economy behaves as it did during the interwar period, with a rather large and fluctuating volume of unemployment, nonfarm prices and production would be considerably lower than under prosperous conditions and farmers would get a smaller share of a smaller national income. Agriculture would face much the same range of problems as during the 1920's and 1930's, including the possibility of severe depression.

TABLE 4.—*Employment, income, and prices, 1935–39 average and 1947, and estimates illustrating relative situations which might exist about 1955–65 under different assumptions*

Series	Unit or base	1935–39 average	1947 preliminary	Alternative situations, 1955–65		
				High employment (approximate)	Intermediate employment (approximate)	
					Average level	Depression
Gross national product	Billions of dollars	84.0	231.8	265.0	205.0	165.0
Disposable income	do	66.2	175.6	200.0	155.0	130.0
Total population	Million	129.0	144.0	158.0	154.0	154.0
Total labor force	do	54.3	61.6	66.0	66.0	66.0
Employment	do	44.9	59.5	62.0	58.0	53.0
Unemployment	do	9.4	2.1	4.0	8.0	13.0
Consumer prices	1935–39=100	100.0	159.0	145.0	125.0	115.0
Wholesale prices	1926=100	81.0	152.0	125.0	105.0	85.0
Food consumption per capita	1935–39=100	100.0	116.0	121.0	115.0	110.0
Agricultural exports	Billions of dollars	.7	3.9	2.0	1.0	.7
Farm output	1935–39=100	100.0	129.0	143.0	[1] 138.0	[1] 133.0
Volume of farm marketings	do	100.0	143.0	155.0	[1] 150.0	[1] 145.0
Prices received by farmers	1910–14 = 100	107.0	278.0	200.0	150.0	100.0
Prices paid by farmers [2]	do	128.0	231.0	200.0	175.0	150.0
Ratio of prices received to prices paid [2]	do	84.0	120.0	100.0	86.0	67.0
Cash receipts from farm marketings	Billions of dollars	8.0	30.0	23.0	17.0	11.0
Gross income from agriculture [3]	do	[4] 10.4	[4] 34.6	27.0	20.0	14.0
Realized net income of farm operators	do	[4] 4.8	[4] 18.0	14.0	9.0	6.0
Net farm income to all farm people [5]	do	[4] 5.4	[4] 20.0	16.0	11.0	7.0
Net income from agriculture [6]	do	[4] 6.5	[4] 22.5	17.0	12.0	8.0

[1] Probably exceeds, by relatively small amounts, quantities that could be marketed through normal channels at the relative price levels specified.

[2] Index of prices and rates paid by farmers including allowance for interest and taxes.

[3] Includes value of farm products consumed in the farm household and the rental value of the farm dwelling.

[4] Includes Government payments.

[5] Net income to all farm people, including farm laborers living on farms, accruing from agriculture.

[6] All income accruing from agriculture, including returns to nonfarm landlords and all farm laborers.

Employment, productivity, and output

Employment.—The size of the labor force is the first factor influencing the potential level of national income. Over very long periods the labor force increases, roughly, in proportion to population. The labor force will increase nearly 10 percent by 1960 and 15 to 20 percent by 1975. The labor force, after about 1965, will be larger if conditions in the immediate future are prosperous, leading to higher birth rates and somewhat higher net immigration, than if the economy is depressed.

Actual employment in the past has varied widely. The high-employment assumption in table 4 is the average level of a pattern similar to that of 1900 to 1930, with unemployment ranging from as low as 2,000,000 to as high as 7,000,000 or 10 percent of the labor force. The intermediate employment situation is similar to the interwar pattern and assumes unemployment averaging about 8,000,000 (12 or 13 percent of the labor force, as in 1921–41) and ranging from three or four million to twelve or thirteen million at different times. The depression situation shown in table 4 represents a low point in this fluctuating employment pattern.

Production per worker.—Measures of productivity per worker over long-time periods are not fully satisfactory, but the data on employment and gross national product (adjusted to eliminate price changes) indicate that production per man-hour has increased slightly more than 2 percent a year since 1910. Part of the increase in production per man-hour has been offset, however, by a reduction in the hours worked per week. Annual output per employed worker, therefore, probably increased at an average rate of between 1½ and 2 percent a year during the last three or four decades. During the depressed conditions of the 1930's, output per worker dropped far below the rather stable trend of the preceding years (largely because of a shorter workweek), but from 1942 to 1947 it has been close to the level indicated by the long-time trend.

The experience of the past is, perhaps, the most reasonable basis for projecting the trend of production per worker. It is impossible to foresee the extent to which the rate of development of new industries and techniques over the next 25 years might differ from the rate in the preceding 25 years. Assuming that with high employment production per worker would increase 1½ percent a year, it would be about 20 percent higher by 1960 than it was in 1947 and about 50 percent higher by 1975.

Under the assumption of intermediate employment, the upward trend in yearly output per worker is estimated at 1 percent, reflecting a lower rate of capital outlay and a shorter workweek. The shorter workweek is assumed to result from pressure to spread the work when unemployment is large. Production per man-hour would increase more nearly in line with the rate under prosperous conditions.

Total output.—These combinations of employment and production per worker imply different levels of the total output of goods and services for the country as a whole. Under the high-employment pattern, total output would reach 125 percent of the 1947 level by 1960 and about 175 percent by 1975.

Prices and income

The general price level.—The general price level cannot be accurately predicted 15 or 25 years in advance. Prices fluctuate so much more widely and erratically than population and production that the kind of analysis that is useful in projecting trends in those variables cannot be employed to make long-range forecasts of prices.

However, some decline from present price levels appears to be almost inevitable after world-wide shortages of foods and other goods have been met. How far down prices may go depends on the ease of the transition of the economy from a situation of acute shortages of many goods to a situation in which demands are easily satisfied. A mild readjustment, with employment and consumers' incomes relatively well maintained, might be reflected in an initial decline in retail prices of somewhat less than 10 percent from 1947 figures. But a drop like that which occurred in 1920–22, or in 1929–33, might reduce retail prices as much as 20 to 25 percent. Even after such adjustments, it is probable that the price level for the long term would be higher than prewar. Wage rates have advanced sharply since then, and their characteristic rigidity in downturns will be reflected in a generally higher postwar level of prices. But after the initial price adjustments, gains in productivity per worker may be partially reflected in a slightly declining price level.

The price levels shown in table 4 are not specific forecasts. But they illustrate the relative levels which might result from initial price drops of different degrees of severity and from different longer-run trends in wage rates.

The Nation's income.—The relative levels of employment, productivity, and prices are reflected in the relative levels of disposable income (personal income after taxes). Under high-employment conditions, money income available to consumers is shown as about 15 percent higher than in 1947. Taking the lower price level into account, the increase in the purchasing power of this income is about 25 percent for the entire population and about 15 percent per capita.

At the average level of the intermediate employment pattern, disposable income in current dollars is reduced about 10 percent below the 1947 level but is over 10 percent above that year in terms of total purchasing power. On a per capita basis, purchasing power would be slightly above 1947.

Under depression conditions, disposable income is reduced one-fourth below 1947 in current dollars but is about equal to 1947 in total purchasing power. Per capita purchasing power would be lower than in 1947.

Although the total purchasing power projected under the last two assumptions would be near that of 1947, it should be noted that 10 to 15 years hence an output equal to that of 1947 would represent a low level of economic activity, in view of the anticipated gains in population, labor force, and productivity per worker. This is illustrated by the fact that in 1939, when there were more than 9,000,000 unemployed, the total purchasing power was somewhat greater than in 1929, a high-employment year.

Farm income and prices.—The varying levels of economic activity projected for 1955–65 have strong implications for farmers. It must also be recognized that the level of nonfarm employment and incomes depends in part on how prosperous farmers are. When farm incomes rise, urban producers have a much better market for clothing, furniture, automobiles, trucks, tractors, farm machinery, fertilizers, and many other types of producers' and consumers' goods.

Over the next 25 years, farm output will continue to rise. As our arge shipments of food abroad diminish, agriculture will depend more on the domestic market to consume its products. How far downward prices of farm products and the income from agriculture may adjust will depend mostly upon the level and stability of employment, prices, and income in the economy as a whole.

Under high-employment conditions, with the resultant strong demand for most farm products, the outlook for agriculture would continue favorable. Prices received by farmers would be near parity (as now calculated). Although cash receipts from farming under the assumptions reflected in table 4 might be more than 20 percent below the 1947 level, they would be almost three time the average receipts of 1935–39. Realized net income of farm operators and net income from agriculture would show similar changes.

Under the average level of the intermediate employment pattern, supplies of many commodities would become burdensome, except in years of short yield. Cash receipts might be reduced by about 25 percent below those indicated for a high-employment economy—primarily a reflection of lower prices. Prices would probably average about 15 percent below parity as now calculated, and agriculture's share of the national income would be smaller than under high employment.

Under depression conditions, agriculture's position would be, roughly, similar to that in the early thirties. Prices of farm products would probably average about two-thirds of parity unless supported. Cash receipts from marketings and net income from agriculture would be less than half of those projected under high employment. Agriculture's portion of the national income would be further reduced and would be shared by a larger number of people as chances for nonfarm employment dwindled.

DOMESTIC CONSUMPTION[1]

Under prosperous conditions, per capita consumption of food would probably increase over the next two decades to about 120 to 125 percent of the 1935–39 level, compared with 116 percent in 1947. Total food consumption might reach 150 percent of the 1935–39 level by 1960 and 165 or more by 1975.

Even with intermediate levels of employment, per capita food consumption would probably average close to 15 percent higher than in 1935–39, with total consumption approaching 140 percent of the 1935–39 level in 1960 and 145 to 150 percent in 1975. The forces making for expansion of farm output would tend to outrun population growth, maintaining relatively high levels of per capita food consumption at the expense of unfavorable farm prices.

Domestic consumption of cotton during the 1955–75 period might average eight or nine million bales with intermediate levels of employment and nine to eleven million bales with high employment and the larger population associated with it. Domestic consumption of tobacco would probably increase more rapidly than population under high-employment conditions, but per capita consumption under intermediate employment might not exceed the 1947 level. Consumption of wool might average about as high as in 1947 under prosperous conditions but considerably lower if there is intermediate employment.

Food consumption

The future level of the demand for food in the United States will largely determine whether our increasing production of farm food commodities will be marketed at prices favorable or unfavorable to agriculture.

The 16-percent increase in domestic per capita food consumption from 1935–39 to 1947 was made possible by the great wartime expansion in food production. That this quantity was consumed at record prices is mainly due to the strength of the demand for food at high income levels. Certain abnormal factors, including the unavailability of some important nonfood items, carried food prices and expenditures in 1947 somewhat above their normal relation to consumer income. Even without the abnormal factors, it is probable that consumers a few years hence will be willing to buy slightly larger quantities of food per capita than in 1947, at prices satisfactory to farmers, if employment remains high. With lower levels of employment, however, per capita food consumption would probably fall somewhat below the 1947 level unless special programs were undertaken to increase consumption and prevent the accumulation of food surpluses.

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[1] Special acknowledgment is due Dr. Margaret G. Reid, of the Bureau of Human Nutrition and Home Economics, for assistance in preparing this section.

Estimates of food consumption.—Table 5 compares actual food consumption for selected years with estimates of the consumption that might result under high and intermediate employment situations, about 1955–65. The estimates are based, in the first instance, on analysis of varying rates of consumption by families in different income groups, with the numbers in these groups adjusted for the projected levels of population, national income, and employment. This approach reflects the influence of income upon the pattern of food consumption at the time when the data regarding family budgets were collected. It does not allow for the long-time shifts in food-consumption habits of the whole population which might come through widespread improvement in nutritional knowledge and practice, through shifts in the patterns of occupation, family size, and rural-urban residence, or through long-run changes in food supplies. It does not provide for developments in the marketing of new and improved food products or for changing price relationships among foods.

TABLE 5.—*Food consumption per capita, 1935–39 average and 1947, indications for 1948, and projections illustrating alternative situations which might exist about 1955–65*

	Unit	1935–39 average	1947, preliminary	Indications for 1948	Projections for 1955–65	
					High employment	Intermediate employment
Index of per capita food consumption (1935–39=100).		100	116	113–115	121	115
Meats, dressed weight	Pounds [1]	126	154	143–146	155–160	150
Eggs	Number	298	380	380	360	345
Chicken and turkey, dressed weight	Pounds [1]	20	27	26	29	27
Total milk equivalent (fat solids basis)	do	801	793	776	885	850
Fluid milk and cream	do	340	398	386	425	380
Cheese	do	6	7	7	8	7
Condensed and evaporated milk	do	17	20	20	20	20
Fats and oils—total (fat content)	do	45	41	41	46	46
Butter, actual weight	do	17	11	11	15	16
Lard	do	11	13	13	12	12
Shortening, margarine, and other edible fats (fat content).	do	20	20	20	22	21
Fruits:						
Fresh—total	do	138	146	143	165	150
Processed—total (product weight)	do	25	44	45–47	47	43
Vegetables:						
Fresh—total	do	235	250	257	275	255
Processed—total (product weight)	do	32	45	46–48	49	46
Potatoes and sweetpotatoes	do	154	141	140	140	140
Sugar, refined	do	96	96	100	105–110	105
Grains (grain equivalent):						
Wheat	do	220	207	209	210	210
All other	do	78	90	82	84	84
Dry beans and peas	do	9	9	8–9	8	8
Peanuts	do	4	5	5	5	5

[1] Primary distribution weight. Comparable with data carried in table 3 of the National Food Situation.

To allow for influences other than income, the consumption levels indicated by the income distributions have been adjusted in accordance with historical trends in the consumption of the major food items. Some of the outstanding trends were shown in figure 6. The adjusted pattern of food consumption by major commodity groups is shown in table 5. These estimates are comparable with the official estimates of food consumption in the United States, published regularly in the National Food Situation.

Allowance for the upward trend in the consumption of vegetable-oil products and in the consumption of evaporated milk is among the adjustments that appear to be necessary. Also, under high-employment conditions, the consumption of butter may remain below prewar levels because of increased consumer purchases of whole-milk products and shifts in butterfat areas from production of milk toward production of other livestock. The prewar trends in the consumption of potatoes and grain products were arrested during the war, and the trend in meat consumption was reversed. The rate of change in the consumption of these items during the next 25 years is particularly difficult to forecast. As a first approximation, consumption of potatoes and cereal products are estimated at about current rates, and no adjustments for trend are made in the figures for meat derived from the data on family budgets.

Comparison with other studies.—Various estimates of the potential demand for food have been made in recent years. They include estimates by the Bureau of Agricultural Economics for the year 1950, estimates by the Twentieth Century Fund for 1960 and estimates included in testimony presented by the Department of Agriculture at the congressional hearings on long-range agricultural policy and programs, October 6, 1947.

Table 6 summarizes these three sets of estimates and compares them with the high-employment estimates developed in table 5. These figures are all in terms of calculated retail weights whereas those in table 5 are in terms of primary distribution weights. The comparison indicates general agreement among the current estimates, the earlier estimates for 1950, and the estimates of the Twentieth Century Fund, although the latter appear to be somewhat higher than would be expected from the accompanying income projections. These series are all estimates of food consumption or demand at high levels of national income. Before making the over-all comparison with the estimates of the Twentieth Century Fund, it was necessary to make several upward adjustments to account for usual differences between estimates based on consumer purchases and estimates of total food disappearance, which include supplementary food supplies distributed through restaurants and other institutions or used as ingredients in processed foods.

TABLE 6.—*Estimates of per capita food consumption under high employment, 1955–65, and comparisons with other studies*

[Retail weights]

	Unit	High employment, 1955–65 [1]	Other studies		
			USDA Misc. Pub. 562 [2]	Twentieth Century Fund, 1960 [3]	USDA testimony [4]
Index of per capita consumption	1935–39=100	121	120	123	133
Dairy products, nonfat solids basis	Quarts	267	250	272	(5)
Dairy products, fat solids basis, including butter.	Pounds	875	885	(5)	1,014
Potatoes and sweetpotatoes	do	[6] 132	124	151	136
Beans, peas, nuts	do	19	21	16	17
Tomatoes and citrus	do	122	120	95	128
Leafy, green, and yellow vegetables	do	124	114	115	102
Other vegetables and fruit	do	254	244	264	302
Meats, poultry, fish	do	171	173	190	192
Eggs	do	44	42	39	41
Fats and oils (including butter and fat pork cuts).	do	72	76	74	73
Flour and cereals	do	[7] 193	193	218	201
Sugar and sirups	do	117	122	118	132

[1] Assuming disposable income about $200,000,000,000, consumer prices about 145 percent of 1935–39 average, and population about 158,000,000.

[2] Derived from table 4, What Peace Can Mean to American Farmers, USDA Misc. Pub. 562.

[3] Derived from table 37, America's Needs and Resources, Twentieth Century Fund, 1947, by applying percentage change from 1936 to 1960 to BAE data on food disappearance in 1936. The Twentieth Century Fund study was based on family-budget data which omit part of the consumption in restaurants and other institutions and exclude some quantities used in commercially processed foods.

[4] Derived from material in testimony by the U. S. Department of Agriculture, Oct. 6, 1947, before House Committee on Agriculture and subcommittee of the Senate Committee on Agriculture.

[5] Not available.

[6] Kept at the 1946 rate of consumption.

[7] Kept at the 1947 rate of consumption.

The figures submitted by the USDA at the joint hearings of the House and Senate Committees on Agriculture were based on entirely different assumptions from those used in making the other estimates. Essentially, they are estimates of what American families want or would like to have; that is, they reflect the average food-consumption pattern in 1941 of families that had incomes above $2,000, a group which accounted for about 40 percent of all families in that year. Such a pattern serves as a long-run goal, rather than as an estimate of what might be attained as an average for all consumers within the foreseeable future. It does illustrate, however, the direction in which rising consumer incomes will pull food consumption under conditions of continuing high employment.

Some implications of higher food consumption.—In broad terms, the analysis of the future demand for food indicates that with economic stability and a high level of employment, a domestic market for food would be created in which a greatly expanded production could be sold at prices considerably more favorable to farmers than those obtained by agriculture in the interwar period. This does not mean that all problems regarding agricultural prices and production would be automatically solved. There would probably be recurrent surpluses of particular products because of abnormally high yields in a particular season, or because of overplantings, or shifts in consumer tastes, or contraction of the export market in instances in which exports are particularly important. But the long-run demand outlook for food is such that farmers generally will have incentives to increase rather than reduce output of most food commodities, if employment remains high.

In general, it may be expected that prewar trends in the consumption of individual commodities will be resumed, although they may be somewhat less pronounced. The upward trend of recent decades in the consumption of fruits and vegetables (excluding potatoes and legumes) is likely to continue. Per capita consumption of meats and whole-milk dairy products is likely to continue high as compared with prewar consumption, although not much higher than in the last 2 or 3 years. Consumption rates for fats and oils and sugar are likely to be substantially higher than they have been in recent years, when supplies have been low because of world shortages, but they are not expected to rise much above those of the higher prewar years.

Distribution of total supplies of food will be influenced not only by the income pattern that may develop, but also by such programs as school lunch and in-plant feeding, and any special consumption programs, of which the food stamp plan is an example.

Domestic consumption of nonfood products

The most important farm products other than foods are cotton, wool, and tobacco. Because the consumption of these products is affected by different factors, except that synthetic fibers are competitors with both cotton and wool, the three products are discussed separately. Table 7 compares actual consumption of these commodities in selected periods with rough estimates of alternative levels that might exist about 1955–65 under high and intermediate employment conditions.

TABLE 7.—*Cotton, wool, and tobacco: Total and per capita domestic consumption, 1935–39 average and 1947, and estimates of alternative levels that might exist about 1955–65*

Item	Unit	1935–39 average [1]	1947 preliminary [1]	1955–65 estimates (approximate)	
				High employment	Intermediate employment
Cotton:					
Total consumption	Thousand bales	6,689	9,539	9,750	8,200
Consumption per capita	Pounds	25.3	32.3	30.0	26.0
Wool: [2]					
Total consumption	Million pounds	592	980	950	750
Consumption per capita	Pounds	4.6	6.8	6.0	4.9
Tobacco:					
Total consumption [3]	Million pounds	916	1,365	1,650	1,475
Consumption per capita	Pounds	7.1	9.5	10.3	9.6

[1] Calendar years.
[2] Apparel, grease basis.
[3] Unstemmed weight equivalent of leaf; includes other materials used in manufactured tobacco.

Tobacco.—The longer range outlook for tobacco is roughly parallel to that for food. Both per capita and total consumption of tobacco had been increasing gradually for many years and during the war they increased rapidly. In 1947, per capita consumption averaged one-third higher than in 1935–39. Consumption has been stimulated recently by high employment and good incomes, but the rising number of consumers is also important.

In view of the persistent long-time trend, tobacco consumption per capita may continue to rise slowly during the next 25 years, if high employment conditions are realized. If employment and income follow the interwar pattern, however, per capita consumption may rise only slightly, if at all, above the 1947 level, even over an extended period.

Cigarettes have greatly outdistanced other tobacco products in consumption. Their use has been particularly large in years of high employment. It is believed that this trend will continue and that cigarettes will be by far the largest part of the tobacco consumed. Cigar consumption, which appears to be recovering from a long decline, may rise gradually. Other tobacco products are expected to remain stable or perhaps to continue a gradual decline. With intermediate employment the smoking of pipes and hand-rolled cigarettes would probably be greater than under high employment conditions, since some consumers would turn to these cheaper forms of tobacco consumption.

Cotton.—Until the middle 1930's, American cotton was predominantly an export commodity in the sense that exports were larger than domestic consumption. Beginning with 1934–35, however, growing domestic consumption exceeded declining exports. During and since the war, the discrepancy between the two has become very large. In 1947, domestic consumption was about 9½ million bales while exports totaled less than 3 million bales.

Per capita consumption of cotton in the United States averaged about 26 pounds per year from 1910 to 1939, moving above or below the average figure from year to year in rough correspondence with the level of business activity. Meanwhile, consumption of synthetic fibers has risen rapidly, so that cotton now accounts for only about 75 percent of all textile fibers consumed in this country as compared with more than 85 percent in the 1920's.

But cotton consumption increased sharply during and following World War II and the recent widespread interest in finding and developing new uses or better ways of using cotton is a strengthening factor. As a result, with high-level employment it appears that the per capita consumption of cotton might be held reasonably close to the 1947 level, even if the average per capita consumption of synthetic fibers should continue to increase. If intermediate conditions of employment should prevail, the per capita consumption of cotton might be considerably less than in 1947 and perhaps about equal to the average prewar level.

Wool.—Consumption of wool is extremely variable. United States consumption averaged 592,000,000 pounds, grease basis, during 1935–39, but it rose tremendously during the war, exceeding a billion pounds in each of the years 1942–46. In 1947, consumption had dropped to approximately 980,000,000 pounds. On a per capita basis, consumption averaged 4.6 pounds yearly in 1935–39, more than 7 pounds during the war, and 6.8 pounds in 1947.

Wool consumption during the war was stimulated greatly by military demands, and continued high in 1946 and 1947, partly through deferred civilian demand. Civilian demand during the last 2 years has been unusually high, and it seems probable that the 1947 figure will not be maintained. Moreover, competition of synthetic fibers, now greater than a decade or two ago, is likely to increase, though the production of materials that combine wool with synthetics may exert a stabilizing influence.

Even under rather favorable conditions of employment and income, per capita consumption of wool is expected to be less than in 1947, but perhaps 20 to 30 percent above the prewar level. If conditions are less favorable, it may drop to around the 1935–39 level, which was also the level of 1925–29. Under either set of conditions, the rate of consumption may show a gradual down trend because of increasing competition from synthetics and the tendency toward lighter clothing associated with improvements in central heating and the use of well-protected and heated transportation.

The extent to which these possible levels of wool consumption will be met from domestic output depends considerably on domestic price policies and their effect on domestic sheep numbers, which have been declining steadily since 1942.

AGRICULTURAL EXPORTS [2]

After the immediate world food crisis is relieved, agricultural exports will probably decline relative to total exports and to total farm production and income. If the restrictive trends of the interwar period are resumed, United States agricultural exports may fall to or even below the 1935–39 average. However, if a more reasonable total volume of international trade can be maintained, United States exports of wheat and tobacco may greatly exceed the 1935–39 average and cotton exports may be only moderately below that average.

During the last 30 years, international trade has become more and more subject to direct political determination. The interwar period was marked by nationalistic actions, a drive for greater self-sufficiency in many importing countries, and a steady shrinkage in the volume of international trade—a shrinkage that affected many farm commodities. Some of the major historical trends in our agricultural exports furnish a perspective for appraising the future of such exports.

The physical volume of agricultural exports.—During the 1920's the total volume of United States agricultural exports was fairly stable from year to year (table 8). During the 1930's, however, the volume declined rapidly. Agricultural exports averaged about 73 percent of the 1924–29 level in the early 1930's but dropped to only 60 percent of that level during the late 1930's. In the late 1930's, cotton exports were about 67 percent of the 1924–29 volume, tobacco 85 percent, wheat 34 percent, and other farm commodities about 60 percent. Part of the decline in United States wheat exports was due to drought but world export supplies of wheat during the late 1930's were sufficient to meet the reduced demand of importing countries.

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[2] Special acknowledgment is due Dr. Oscar Zaglits and Clarence M. Purves, Office of Foreign Agricultural Relations, for assistance in preparing this section.

TABLE 8.—*Physical volume of agricultural exports, total and selected commodities, United States, fiscal years, 1916–47*

[Indexes, 1924-29=100]

Period [1]	Total agricultural exports	Cotton and linters	Tobacco unmanufactured	Wheat and flour	Fruits
1916-20 average	106	68	91	120	38
1921-25 average	103	74	91	140	56
1926-30 average	98	101	104	92	105
1931-35 average	73	90	87	40	107
1936-40 average	60	67	85	34	109
1941-45 average	[2] 52	16	66	23	58
1946	[2] 96	43	110	[3] 175	75
1947	[2] 93	46	122	[3] 169	99

[1] Years ending June 30.

[2] This index considerably understates exports after 1939-40 because it does not include many new food products which became important during the war; also, it excludes military shipments of food for foreign civilians in occupied territories. Rough adjustments for these factors would raise the 1946 and 1947 fiscal year indexes to about 115 to 125 percent of the 1924-29 base. Similar adjustments have not been attempted for 1941-45.

[3] If military shipments to foreign civilians were added the 1946 and 1947 indexes would both be about 220

Indexes calculated by Office of Foreign Agricultural Relations.

TABLE 9.—*Value of agricultural exports, total and selected commodities, United States, fiscal years 1911–47*

Period [1]	Value of exports				
	Total agricultural	Wheat, including flour	Cotton, excluding linters	Tobacco, unmanufactured	Wheat, cotton, and tobacco as percent of total agricultural exports
	Million dollars	*Million dollars*	*Million dollars*	*Million dollars*	*Percent*
1911-15 average	1,157	172	[2] 536	46	65
1916-20 average	2,638	452	757	129	51
1921-25 average	2,093	415	761	168	64
1926-30 average	1,792	232	823	147	67
1931-35 average	767	53	369	102	68
1936-40 average	762	44	317	126	64
1941-45 average	1,456	44	125	120	20
1946	[3] 3,257	[3] 730	417	275	44
1947	[3] 3,738	[3] 956	589	324	50

[1] Years ending June 30.

[2] Linters not separately reported until 1914-15; earlier years include linters, if any.

[3] Including military shipments of food for foreign civilians in occupied areas.

Fruit was the only major commodity group for which exports were higher in the late 1930's than in 1924–29.

The dollar value.—The dollar value of United States agricultural exports shrank much more drastically than the physical volume, because farm prices were declining (table 9). The value of farm exports averaged $767,000,000 in the early 1930's and $762,000,000 in the late 1930's, or only about 40 percent of the 1924–29 level of $1,873,000,000.

In terms of dollar value, cotton, wheat, and tobacco have made up a rather stable proportion of United States agricultural exports (table 9 and fig. 10). They have averaged between 64 and 68 percent in each 5-year period from 1910 to 1940 except for the period including World War I. During World War II, these commodities made up only 20 percent of the value of agricultural exports, but the percentage has since returned rapidly toward the prewar figure and will probably approach 60 percent in 1947–48. The future of total agricultural exports also will hinge largely upon these three commodities.

Destinations of United States agricultural exports.—A large proportion of our exports of wheat, cotton, tobacco, and many other farm products has traditionally gone to Europe, as indicated by table 10.

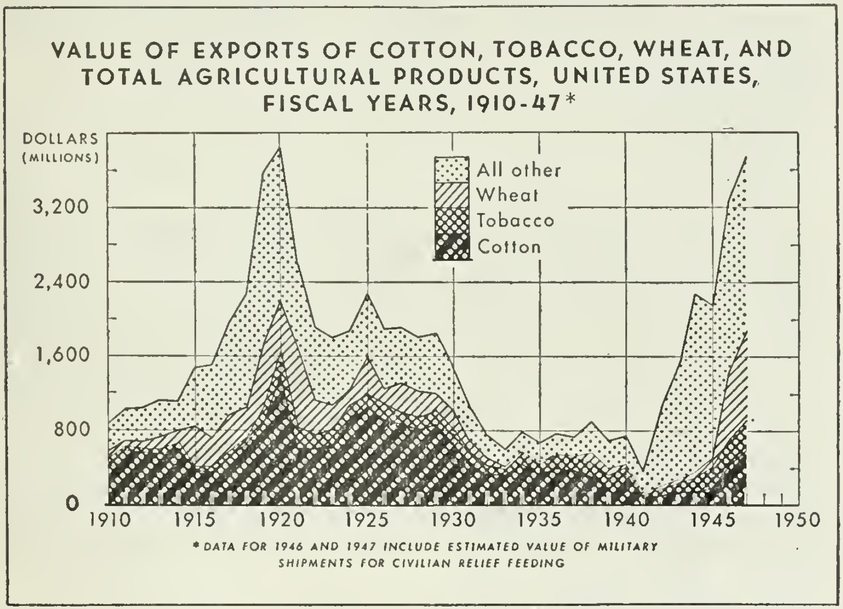

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FIGURE 10.—The value of agricultural exports declined sharply from 1920 to 1940 but was again at a war-induced peak in 1947. Cotton, tobacco, and wheat usually account for about two-thirds of the value of all farm exports.

TABLE 10.—*United States exports of cotton, wheat, and tobacco, total and to Europe, fiscal years, 1921–40 and 1947*

Commodity and period [1]	Total United States exports	United States exports to Europe	Exports to Europe as percent of total
Cotton, excluding linters:	*1,000 bales*	*1,000 bales*	*Percent*
1921-25 average	6, 314	5, 339	84. 6
1926-30 average	8, 579	6, 806	79. 3
1931-35 average	7, 623	4, 999	65. 6
1936-40 average	5, 619	3, 911	69. 6
1947 [2] average	3, 935	2, 360	60. 0
Wheat and flour: [3]	*1,000 bushels*	*1,000 bushels*	
1921-25 average	259, 492	181, 575	70. 0
1926-30 average	170, 077	88, 885	52. 3
1931-35 average	73, 403	33, 014	45. 0
1936-40 average	62, 953	36, 809	58. 5
1947 [2] average	[4] 396, 400	[4] 253, 000	[4] 63. 8
Tobacco, leaf:	*1,000 pounds*	*1,000 pounds*	
1921-25 average	474, 284	363, 784	76. 7
1926-30 average	533, 294	333, 288	62. 5
1931-35 average	433, 248	283, 648	65. 5
1936-40 average	405, 309	301, 913	74. 5
1947 [2] average	569, 872	432, 315	75. 9

[1] Years ending June 30.
[2] Preliminary.
[3] Flour in grain equivalent.
[4] Including military shipments for foreign civilians in occupied areas.

The percentages of these commodities going to Europe during 1946–47 were substantially the same as in the interwar period. As in the past, the level of European demand for our farm products will largely determine the level of total exports of these products.

Agricultural exports in a larger perspective.—For nearly a century the proportion of farm products in total United States exports has been declining. Before the Civil War, farm products made up nearly 80 percent of the total value of exports. By 1910–14, the percentage had declined to about 50. From 1920 to 1940 agriculture's share moved as follows:

Fiscal-year averages:	
1921–25	46
1926–30	37
1931–35	37
1936–40	25

During the fiscal year 1946 agricultural exports averaged 37 percent of total exports and 29 percent in fiscal 1947. The increase over recent prewar levels was called for by the world food crisis and was made possible by record levels of food production in the United States. There is no reason to believe that the long-run downward trend in agriculture's share of total exports has been permanently reversed, but it could be retarded by economic recovery in Europe and by our own future policies with respect to prices, methods of trading, and foreign investment.

Agricultural exports have also shown a declining trend in relation to total farm production and income. In 1910–14, agricultural exports valued at shipside were equivalent to 18 percent of cash receipts from farm marketings. During the interwar period the relationship declined as follows:

Calendar-year averages:	
1920–24	23
1925–29	17
1930–34	13
1935–39	9

This relationship moderately overstates the importance of farm exports, since the export value of farm products exceeds the farm value by the amount of transportation, processing, and other charges.

The shrinkage of foreign demand for cotton and tobacco during the 1930's intensified acute economic problems in the South. To some extent, however, the declining percentage of exports reflected an increasing orientation of our agricultural production toward the growing domestic market.

The emergency food exports of 1946 and 1947 raised export values to 13 or 14 percent of cash farm receipts. But the downward trend in the export percentage is likely to be resumed after the present world food crisis is over, although exports will still be of major importance to a number of specialized farming areas and producer groups, especially those producing wheat, cotton, tobacco, rice, naval stores, apples, citrus, and dried fruit.

Means of payment for United States exports.—The simplest form of international trade would be a straight exchange of goods for goods, with commodity imports exactly balancing commodity exports. The actual situation is more complicated, of course, but it remains true that all exports must be paid for by some means. Except for emergency periods in which some exports are made as gifts, exports must be paid for either by imports (including gold imports and "imports" of shipping and other services) or by a net increase in the foreign investments of the country that has the export surplus of goods.

On the average, during the interwar period, about 80 percent of United States exports of goods and services were paid for by imports of goods and services (table 11). The other 20 percent was paid for by means of gold shipments to the United States, liquidation of assets held in this country by foreigners, sale of assets in other countries to United States investors, and by other financial transactions. Large increases in the value of United States exports during and after World Wars I and II were accompanied by sharp increases in the proportion of total exports paid for by means of loans, gifts, and other capital or gold movements. During 1919–21, only 60 percent of our exports were paid for in goods and services, and during 1942–47 less than 50 percent of our exports have been paid for in this way. Within a relatively short period, United States exports will decline from the current abnormal level, but unless other countries increase their exportable supplies and unless we are willing to buy them, a sizable gap is likely to remain between United States exports and United States imports.

TABLE 11.—*Gross national product, and exports and imports of goods and services, United States, 1919–47*

Period	Gross national product [1]	United States imports of goods and services	United States exports of goods and services	Imports as percent of exports
	Billion dollars	*Billion dollars*	*Billion dollars*	*Percent*
1919–20 average	85.0	6.3	10.5	60
1921–25 average	81.4	4.4	5.6	77
1926–30 average	96.8	5.4	6.4	83
1931–35 average	65.4	2.6	3.0	87
1936–40 average	90.1	3.6	4.4	80
1941–45 average	180.2	7.3	15.1	48
1946	203.7	7.1	15.3	47
1947 preliminary	230.0	8.0	19.4	41

[1] Department of Commerce, new series, 1929 to date. Estimates for 1919–28 are based on old published estimates of the Department of Commerce adjusted to the level of the new series.

Source: Imports and exports from International Economics Division, Office of Business Economics, U. S. Department of Commerce.

The value of United States imports of goods fluctuated rather closely with the gross national product during the interwar period, since both prices and consumption of imported materials were influenced by domestic prices and employment (table 11). Although imports in the longer postwar period will not necessarily return to the prewar relationship, it is clear that a high gross national product will be accompanied by a larger value of imports than will a lower one. Under high employment, particularly, we shall need substantial imports of industrial raw materials. Consequently, the higher national product will result in a larger amount of dollars available to foreign countries for the purchase of United States exports, both agricultural and other. This mechanism may appear to be complicated, but the effects of changes in our national income upon aggregate imports are swift and relatively sure.

Implications of European recovery.—In the longer postwar period, a prosperous Europe will be a better market for United States tobacco, cotton, and wheat than would a destitute Europe. Europe has been the destination of two-thirds to three-fourths of our exports of cotton and tobacco, and more than half of our exports of wheat. Our export price policies in relation to those of other producing countries will have a decided effect upon the future quantities of our exports. If a foreign-aid program of the magnitude now under discussion is adopted during the 1948–52 period, a relatively strong demand may be expected for United States wheat as well as substantial quantities of other foods. Estimated shipments of United States grain during the next 4 years average about 350,000,000 bushels yearly, most of which would go to Europe. Unless yields continue high, these demands will impose an unusual strain on our grain-producing areas until production in Europe and exports from some of its traditional suppliers have regained prewar levels. European demand for United States cotton and tobacco will probably depend considerably upon the volume of funds made available under such an aid program.

Alternative levels of exports.—The level of agricultural exports 10 to 25 years hence is uncertain. Many important questions affecting international trade have not yet been resolved. If world developments permit western Europe to rely on overseas areas for the foods and raw materials which they can produce economically, United States farmers will share in the expanded market. But if we are to export larger quantities of some farm products, we must generally be willing to import larger quantities of other farm, mineral, and industrial products. Another uncertain factor is the level of foreign investment which may exist a decade or two hence.

If the restrictive trends of the inter-war period are resumed, by about 1955–65 the United States may be exporting perhaps 100,000,000 bushels of wheat, less than 400,000,000 pounds of tobacco, and not more than 2 to 3 million bales of cotton. Wheat exports would be considerably above the level of 1935–39, but tobacco would be the same or slightly lower, and cotton exports probably about half of the 1935–39 average. Outlets for other products would also be limited, and the total physical volume of agricultural exports would probably be lower than in 1935–39.

However, the world needs United States wheat, cotton, and tobacco if prewar levels of consumption are to be restored. If international trade can be maintained at a level reasonably consistent with the relative advantages of different areas in different lines of production, the outlook for United States agricultural exports will be much more favorable. Exports of 200 or more million bushels of United States wheat, 550 to 600 million pounds of tobacco, and as much as 4 or 5 million bales of cotton would be fully consistent with foreign needs as well as with our own capacity for economic production. Exports of other commodities, including fresh and processed fruits, lard, and coarse grains, could also increase substantially over the drought- and depression-affected levels of 1935–39.

AGRICULTURAL PRODUCTION

Under prosperous conditions, with favorable farm prices, farm output will probably increase about as fast as, or slightly faster than, population. As emergency food exports decline, this will permit a per capita food consumption somewhat higher than the 1946 record. Under less prosperous conditions, farm output would increase less rapidly and would sell at prices well below those that would be expected under conditions of high employment.

The use of improved varieties, more fertilizer, and better practices will increase crop production per acre, especially under prosperous conditions. The upward trend in livestock production per breeding unit will continue. Further replacement of horses and mules by tractors will release 15 to 20 million acres of cropland to feed other types of livestock or to grow food crops. Several million acres of new land are likely to be brought in through irrigation, drainage, and clearing, but some poorer land will be retired, and total cropland acreage will increase relatively little. The combined effect will be to enable fewer farm workers to increase the total farm output.

Wartime increases in production

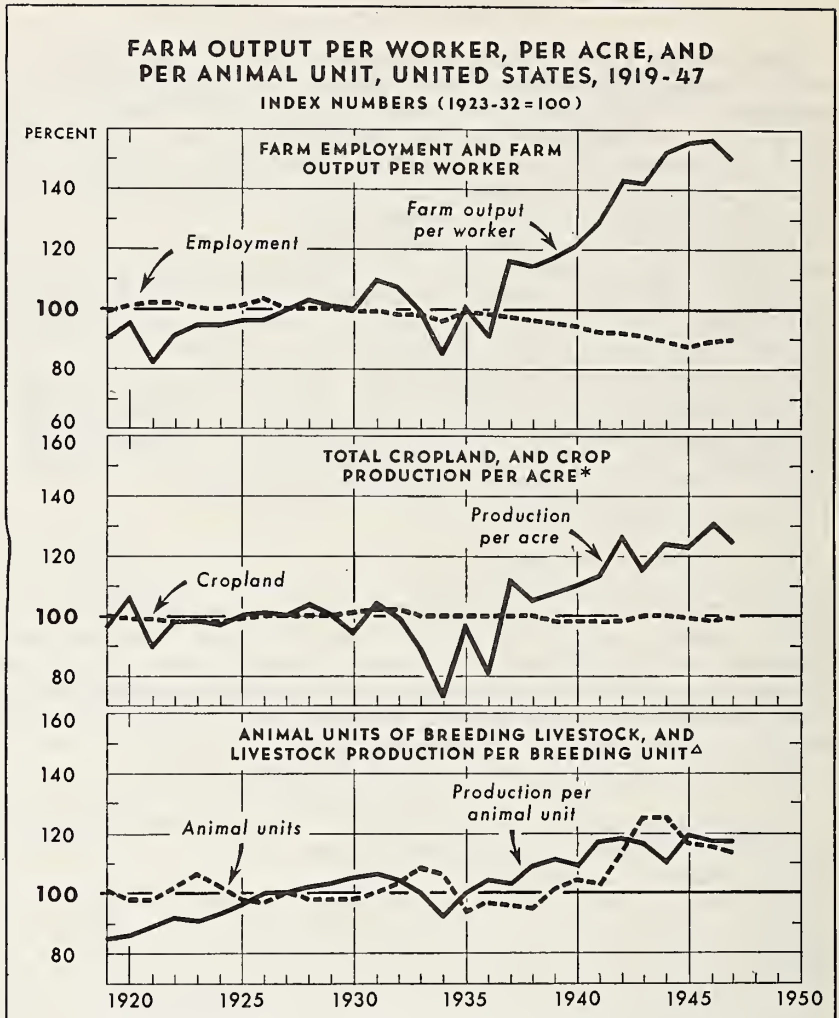
Farm production rose so rapidly during and after the recent war that we think of the changes as an "agricultural revolution." But actually only a few new developments took place in agriculture. Rather, farmers cashed in on production techniques that had been developed over several decades. Favorable weather and price incentives aided greatly in bringing record farm production. An appraisal of the basic factors behind the rapid rise of farm production during the war will provide some clues regarding the probable course of production over the next decade or two (fig. 11).

Increased crop production per acre was the chief factor in the wartime rise in farm output. The area used for crops changed very little from prewar figures. But crop production per acre in 1942–46 was nearly a fourth greater than in 1935–39.

Three broad factors were of about equal importance in raising crop yields: (1) Use of fertilizer increased greatly. By the end of the war farmers were using almost twice as much fertilizer as they used in 1935–39. (2) Weather was generally more favorable for crops in 1942–46 than in 1935–39. (3) There was greater use of lime, hybrid corn, and improved varieties of other crops, soil-improvement and soil-conservation practices, and other factors. For example, it is estimated that, with average weather, the use of hybrid seed now adds about 400,000,000 bushels to the annual corn crop.

Rapid strides in farm mechanization that occurred during the war, despite some limitations on machinery production, contributed directly to the increase in output of farm products for human use. Large quantities of feed and other resources formerly devoted to the raising, care, and maintenance of horses and mules were shifted to the production of meat animals and animal products for human use.

Increased mechanization raised farm output in other ways. The speed with which certain operations could be completed aided greatly in the production of record corn crops even when the late wet springs in several recent years seriously delayed planting in the Corn Belt.



*TOTAL CROPLAND IS THE SUM OF THE ESTIMATED ACREAGE OF LAND FROM WHICH ONE OR MORE CROPS WERE HARVESTED PLUS ACREAGE OF CROP FAILURE AND SUMMER FALLOW

△INCLUDES ALL BREEDING LIVESTOCK EXCEPT HORSES, AND ALL LIVESTOCK PRODUCTION EXCEPT FARM-PRODUCED POWER OF HORSES AND MULES

DATA FOR 1947 ARE PRELIMINARY

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FIGURE 11.—Some of the factors which have accounted for the increase in farm production are shown above. Mechanization, fertilizer, use of better seed and animals, have allowed farm output per worker to increase at the same time that total farm employment was decreasing. Crop yields per acre have shown a steady uptrend since recovering from the severe droughts of 1934 and 1936, while livestock production per breeding unit has also shown a steady increase. The acreage of cropland has not changed significantly since 1920.

Production of meat animals and livestock products for human use rose sharply during the war. Expanded production of feed grains and hay, and generally favorable pasture conditions, formed the chief bases for the large increase in output of livestock and livestock products. The rapid rise in livestock production during the war came about through a sharp increase in the number of breeding units and a significant increase in livestock production per unit of breeding livestock. The latter was a continuation of the long-time upward trend in livestock production per unit owing to improved breeding, heavier feeding of more balanced rations, and advances in livestock sanitation and management.

Future trends in production

The course of agricultural production in future decades depends chiefly on the trend in farm technology and the rate of adoption of improved practices by farmers. A clue to future possibilities is contained in a cooperative study conducted by the land-grant colleges and the United States Department of Agriculture. Committees in each State estimated what it would pay farmers to do in adopting known improved production practices. These estimates assumed average weather and relatively attractive farm prices. The suggestions of the committees, if fully adopted, would result in an index of crop production per acre of 133, compared with 123 for 1942–46.

After making allowances for variations in weather, yields per acre have been rising at the rate of about 1 percent per year for the last two decades. But yields cannot be expected to continue to increase at this rate. Hybrid corn was a very influential factor in the past; nothing comparable is now on the horizon. Soil depletion through erosion and crop removal will retard the rate. However, with average weather, a high level of economic activity and continuing emphasis on conservation, an index of crop production per acre of 133 seems probable by about 1965.

Favorable prices will encourage farmers to adopt improved practices of many kinds, including the increased use of fertilizer. As a rule, the use of fertilizers has increased most when prices were good and dropped back when they were low (as in 1921 and 1932). During World War II fertilizers helped so much to maintain or increase yields in areas and on crops where it was virtually unknown before the war that the upward trend in fertilizer consumption seems likely to continue. It has more than doubled since 1935–39, and may redouble in the next quarter century if prices of farm products remain relatively high.

The approximate yields of some of our important crops that would be associated with an index of crop production per acre of 133 are shown in table 12. All of the projected changes appear reasonable when the conditions under which the various crops are produced are considered. But there will still be wide variations in crop yields from year to year because of weather. This is indicated for most of the listed crops by comparing the lowest and highest per acre yields realized over the last 11 years, 1937–47.

Assuming an index of crop production per acre of 133 in 1965, and continuing high levels of economic activity, the probable trend in farm output over the next three decades can be projected fairly well. The estimates are for indexes of total output of about 138 in 1955, about 148 in 1965, and about 160 in 1975. In addition to the upward trend in crop production per acre, this expansion in farm output will likely be supported by an increase in livestock numbers as well as in production per animal unit.

TABLE 12.—*Crop yields per acre: selected periods, and estimates for about 1965*[1]

Crop	Unit	1937–41 average	1942–46 average	Highest and lowest yields, 1937–47		1965 estimated[2]
				Lowest	Highest	
Wheat, all	Bushels	12.5	16.3	10.8	18.3	14.6
Corn	do	28.1	33.3	27.0	36.2	35.8
Oats for grain[3]	do	31.6	33.0	28.6	36.6	36.5
Soybeans for beans[3]	do	18.7	18.9	16.2	20.9	21.9
Peanuts[3]	Pounds	767	650	623	861	916
Cotton, all[3]	do	246	263	232	299	315
Sugar beets	Tons	11.8	11.0	10.6	13.0	13.9
Potatoes, all	Bushels	124	148	119	183	190
Sweetpotatoes	do	85	93	79	97	110
Tobacco[3]	Pounds	941	1,076	866	1,182	1,200
All tame hay[3]	Tons	1.39	1.48	1.34	1.53	1.80

[1] Assuming relatively high employment and favorable farm prices. Yields are per seeded acre unless otherwise noted.

[2] Based largely on estimates in USDA Miscellaneous Publication 595, Peacetime Adjustments in Farming—Possibilities Under Prosperity Conditions.

[3] Per harvested acre.

The trend toward increased mechanization will continue. The downward trend in horses and mules has been persistent over the last quarter of a century and will undoubtedly continue. Already this has released around 55,000,000 acres from producing feed for workstock to producing crops for direct human use and another 15 to 20 million acres will likely be released in the next generation—mostly before 1965. Further possibilities for timeliness in farm operations will appear as mechanization proceeds. This timeliness will have more effect on crop yields in the future, and should modify the loss in crop yields due to fluctuations in weather.

Anticipated land development will have its most important effect in raising the average crop production per acre, rather than in net additions to our land base. Several million acres of new land may be brought in through irrigation, drainage, and clearing, but some of the poorer land will be retired from crop production. If public-development work now under way is continued and all authorized work is carried out, about 4½ million acres will be brought under irrigation in the next 10 years; meanwhile around 8 million acres will probably be improved by drainage or clearing. About half of these 12½ million acres would be on existing farms and half would involve development of new farm land. Additional acreages can be developed by irrigation, drainage, and clearing if needed over the years still further ahead.

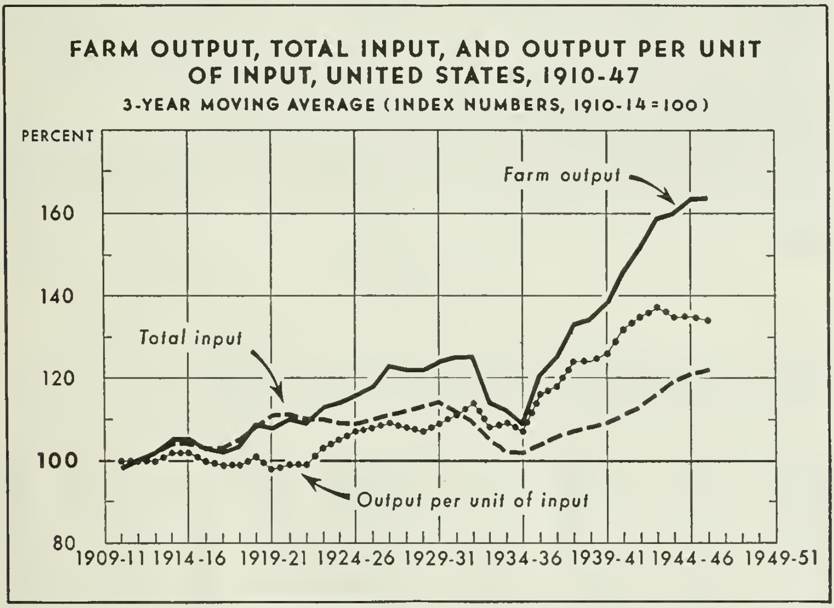
Production under less favorable conditions.—High levels of economic activity would have a much greater effect in increasing farm production than lower levels of economic activity would have in decreasing it. A continuation of economic activity at some intermediate level over the next three decades, however, would be a definite drag on the rate of increase. There would be less incentive for increasing the practices that involve considerable cash outlay. But even under unfavorable conditions it is doubtful if farm output would be reduced more than 5 to 10 percent below what would otherwise be expected over the decade 1965–75.

Conservation aspects.—The sharply higher crop production during recent years has been obtained partly at the expense of soil maintenance. In most areas this has meant diminishing the soil-fertility reserve, despite the accelerated use of commercial fertilizers. In some instances serious soil depletion has occurred. The proportion of our cropland planted to intertilled crops increased substantially in some areas during the war. Record-breaking wheat crops have been achieved, but only by greatly reducing the acreage of summer fallow and plowing additional acres which, over a longer period, are better adapted to range use than to cultivation.

Continued increases in crop yields will be more difficult to get unless changes are made in land use and in cropping practices. But an upward trend in crop production can be achieved concurrently with maintenance and improvement of soil resources. Much greater emphasis should be given to production of the sod crops—high-quality hays and improved rotation pastures—together with enough livestock to utilize the increased forage. The wider use of such devices as contour farming, strip cropping, and terracing is also needed in many areas while some of the poorer, more erosive land needs to be retired to grass or reforested. Such shifts would increase farming efficiency, while the additional meat and milk resulting from emphasis on grassland farming would aid in improving the national diet.

Farm production costs

Aggregate farm costs.—There have been remarkable gains in efficiency in farm production over the last third of a century (fig. 12). While the total input or aggregate amount of all resources used—land, labor, machinery, and materials valued in terms of "constant" dollars—in agricultural production has increased only about 20 percent, total farm output has risen about two-thirds. This means that the actual production per unit of agricultural resources used has increased about



FARM OUTPUT, TOTAL INPUT, AND OUTPUT PER UNIT OF INPUT, UNITED STATES, 1910-47

3-YEAR MOVING AVERAGE (INDEX NUMBERS, 1910-14 = 100)

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FIGURE 12.—Farm production has become increasingly efficient over the last third of a century. Farmers have been getting more and more output for each unit or dollar's worth of input or resources used. The result is that farm output has increased much faster than the aggregate amount of labor, materials, and machinery used, even after allowing for extraordinarily good weather during the war.

one-third since 1910–14. Further gains in efficiency are probable and aggregate or total costs will continue to increase at a slower rate than production, although it appears that increasing amounts of machinery will be substituted for labor. More materials will be used and the number of breeding livestock increased.

Cash production expenses.—Farmers will probably continue to pay cash for an increasing proportion of their equipment and materials. The fluctuations in prices paid by farmers that have accompanied wars and depressions have greatly affected total cash production expenses (table 13). There has been an upward trend in the quantity of feed and livestock bought, chiefly because of a growing interdependence among farming regions. The volume of these interfarm sales will probably increase as our agriculture becomes more specialized. Cash expenditures for fertilizer and lime, motor vehicles, farm machinery, gasoline, oil, and electricity will continue upward.

The use of hired farm labor may decrease as mechanization advances; but barring a severe depression, farm-wage rates are expected to remain well above prewar levels. Expenditures for hired farm labor will continue to be an important farm-production expense, and will stimulate future mechanization.

The future course of expenditures for farm-mortgage interest and rents will depend partly on the changes in the economic welfare of agriculture. Increasing capital requirements in farming may mean that many farmers will have to depend more heavily on long-term real-estate loans, or on renting, rather than owning, land. This will be true particularly if farm land values remain relatively high, as is likely to be the case under conditions of prosperity.

The growing dependence of agriculture upon cash production items and the relative stability of the prices paid for them may make farmers increasingly vulnerable to future declines in the prices of farm products.

TABLE 13.—*Cash production expenses of farm operators, United States, selected periods, 1910–47*

[In millions of dollars]

Period or year	Feed purchased [1]	Livestock purchased [1] [2]	Fertilizer and lime	Cost of operating motor equipment	Depreciation on buildings and equipment	Hired labor	Taxes levied	Farm mortgage interest	Rent [3] [4]	Other [5]	Total
1910–14	403	211	173	20	722	784	226	251	409	659	3,858
1915–19	749	389	250	135	1,073	1,139	342	385	798	985	6,245
1920–24	915	291	255	276	1,392	1,301	570	647	598	1,245	7,490
1925–29	933	423	263	450	1,235	1,280	610	595	670	1,171	7,630
1930–34	510	202	180	416	961	736	515	514	359	881	5,274
1935–39	676	298	217	494	996	928	442	345	427	820	5,643
1940	998	478	261	568	1,096	1,020	446	293	460	849	6,469
1941	1,089	602	292	633	1,233	1,238	457	286	656	934	7,420
1942	1,625	802	352	735	1,402	1,626	461	273	964	1,120	9,360
1943	2,137	778	423	851	1,576	2,009	472	247	1,135	1,220	10,848
1944	2,427	688	476	942	1,867	2,184	495	236	1,194	1,279	11,788
1945 [6]	2,845	870	510	1,010	2,069	2,299	554	228	1,193	1,318	12,896
1946 [6]	3,031	1,051	621	1,024	2,210	2,536	617	228	1,255	1,471	14,044
1947 [6]	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	16,600

[1] These items are chiefly interfarm purchases.

[2] Excluding horses and mules.

[3] Rent due to landlords not living on farms; includes Government payments to such landlords.

[4] Figures for 1935–45 adjusted to exclude farm-mortgage interest paid by nonfarm landlords. Such interest is included in the series on farm-mortgage interest.

[5] Comprises horses and mules; seed; insecticides; containers; electricity; twine; ginnings; operating gasoline and steam engines; irrigation charges; grazing feeds; fire, windstorm, and hail insurance; crop insurance; blacksmith expenses; miscellaneous dairy and hardware supplies; miscellaneous greenhouse and nursery expenses; veterinary bills and medicines; sugar tolls and total short-term interest.

[6] Preliminary.

FOREST PRODUCTS [3]

Forest products are an important element of agricultural production. Even with good forestry there is no possibility that the Nation's potential requirements for forests, under conditions of relatively high employment, will be met by new timber growth by 1975. Our 139,000,000 acres of farm woodlands comprise 30 percent of all commercial forest land and are indispensable to the Nation's timber supply. The farm woodlands are run down, but productivity could be increased substantially by 1975. It looks as though farmers can anticipate relatively good prices and markets for forest products during the years ahead, especially if we have high employment.

Importance of farm woodlands

The 139,000,000 acres of farm woodland are a significant part of the Nation's agricultural plant. For example, woodland comprises about half the total farm acreage in New England and some 40 percent in the South. Farm forest products provide farmers with a valuable source of cash income, over wide areas. Much of the forestry work can be done in slack seasons. And fuel wood, fence posts, and other products cut for home use reduce the annual cash outlay.

Comprising 30 percent of all the Nation's commercial forest land, farm woodlands are indispensable to the national timber supply. They are also valuable for watershed protection, soil conservation, recreation, and other purposes. But it is in timber use that they have a direct bearing on farm income.

Farm woodlands are badly run down. Their contribution is only one-third to one-half of what it might be were they fully productive. To restore productivity is a matter of decades but widespread and purposeful management could achieve substantial improvement by 1975, particularly in the South where the rate of growth is rapid. Whether sustained income from forest products actually increases depends largely on whether farmers liquidate their forest capital or timber-growing stock at current high prices, or whether they improve their growing stock and build up capacity for sustained yields.

Timber supply running low

The Nation's output of forest products has not kept pace with needs since the outbreak of World War II. Timber shortage, the impact of which has been deferred by almost 20 years of depression and then war, is now brought into sharp relief by the demands of high industrial activity. The demand for new housing is not likely to be satisfied for many years. Wholesale prices for lumber were three times as high in 1947 as in 1936. The Bureau of Labor Statistics index for January 1948 was 307 compared with 193 for all building materials and 166 for all commodities.

Although current demands are not being adequately met, annual timber cut is substantially above prewar levels and we are overdrawing our forest bank account. The 1,601 billion board feet of saw timber reported in 1945 was 43 percent less than in 1909 and 9 percent less than in 1938. Just as important, the quality and size of the timber are deteriorating. Nationally the 54-billion-board-foot saw-timber drain (cut plus natural losses) in 1944 exceeded the annual growth of 35 billion board feet by 50 percent (table 14). Because of the backlog of virgin timber, this is not serious in the West, but continuation of the present rate of cutting in the East, which has the bulk of the farm woodlands, means depletion of forest capital and will be at the expense of future output there. Despite the near-balance between the cubic-foot drain and the growth for all timber including both saw timber and smaller trees, 80 percent of the drain is in saw timber, particularly softwoods, whereas much of the growth is in small low-grade trees and inferior hardwoods.

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[3] Special acknowledgment is due C. Edward Behre, Forest Service, for assistance in preparing this section.

TABLE 14.—*Annual drain and growth on commercial forest lands, United States, 1944*

Item	Saw timber	All timber
	Billion board feet	*Billion cubic feet*
Annual drain:		
Lumber	34.4	6.7
Pulpwood	4.8	1.3
Fuel wood	3.9	2.2
Other commodities [1]	6.6	2.0
Total commodity cut	49.7	12.2
Losses from fire, insects, diseases, etc	4.2	1.5
Total drain	53.9	13.7
Annual growth	[2] 35.3	[3] 13.4

[1] Includes principally hewed ties, fence posts, poles, piling, veneer logs, mine timbers, cooperage stock, and shingles.

[2] Annual growth of trees above minimum saw-timber size in accordance with regional practices, and total volume of trees reaching such minimum sizes each year; all on lumber-tally basis.

[3] Annual growth on all trees 5 inches diameter breast high and larger, including tops and limbs (top only in softwoods), of saw-timber trees and total volume of trees reaching 5 inches in diameter breast high each year. Bark not included.

Source: Forest Service, U. S. Department of Agriculture.

Potential requirements

There is every indication that with a continuation of high-level employment the demand for major forest products will remain strong for several decades.

Lumber makes up 70 percent of the saw-timber cut. Production for 1947 is estimated at 38 billion board feet compared with an average of 26 billion in the period 1935–39 (table 15). The Forest Service estimates potential requirements for 1955, under assumptions of full employment and adequate supply, at 42.5 billion board feet; and a figure only slightly lower is believed logical for later decades. But, because of timber depletion, it is not likely that the supply will be adequate or that such requirements can be met. This applies also to such other products as veneer and plywood, that come from large trees.

Although the United States has traditionally been a net exporter of lumber, the situation has been reversed since 1941, with the imports since that year averaging about twice the exports. However, exports have increased again and were about 1.4 billion board feet in 1947 (about 3 percent of production) while imports are at about the 1946 level of 1.2 billion board feet annually (table 15). Looking ahead, shortage of lumber in other parts of the world, especially for reconstruction in Europe, will increase the pressure for exports from the United States, even though production here will be insufficient for our own needs. And because there is a world shortage of softwood timber, it is not likely that imports of lumber for construction will be larger than at present.

TABLE 15.—*Lumber: Production, imports, and exports, United States, selected years, 1909–47*

[In millions of board feet]

Year	Production [1]	Imports [2]	Exports [2]	Year	Production [1]	Imports [2]	Exports [2]
1909	*44,510	846	1,763	1939	28,754	718	1,104
1914	40,500	925	2,829	1941	36,538	1,361	692
1919	*34,552	1,149	1,486	1942	*36,332	1,540	463
1924	39,500	1,743	2,748	1943	*34,289	856	310
1929	38,745	1,543	3,197	1944	*32,938	1,010	360
1932	13,524	381	1,156	1945	*28,122	[3] 1,062	[3] 427
1935	22,943	438	1,313	1946	[3] 36,382	[3] 1,238	[3] 649
1937	29,003	688	1,443	1947	[3] 38,000	----------	----------

[1] Forest Service estimates except when an asterisk (*) indicates census data.

[2] From Foreign and Domestic Commerce and Navigation of the United States. Data are for fiscal years through 1918—calendar years thereafter.

[3] Preliminary—subject to revision.

Pulpwood accounted for 11 percent of our timber cut in 1944. United States consumption of pulp and paper products has been rising for many years (table 16). Before the war, imports (in terms of equivalent pulpwood volume) made up about half of our consumption. Although domestic pulpwood cut, which reached 17,000,000 cords in 1946, has trebled in 20 years, imports have also increased about 50 percent and still account for 35 percent of consumption.

TABLE 16.—*Pulpwood: Production, exports, imports, and consumption, United States, selected years, 1924–46*

[Thousands of cords]

Year	United States pulpwood production [1]	Exports [2]	Imports [2]	Total United States consumption [2]	Year	United States pulpwood production [1]	Exports [2]	Imports [2]	Total United States consumption [2]
1924	4,739	299	5,539	9,979	1941	14,250	1,349	7,425	20,326
1929	6,465	545	7,609	13,529	1942	14,982	1,281	7,518	21,219
1932	4,919	299	5,596	10,216	1943	13,617	1,052	6,936	19,501
1935	6,620	630	7,434	13,424	1944	15,369	868	6,352	20,853
1937	9,392	1,005	9,454	17,841	1945	15,295	951	7,956	22,300
1939	9,761	714	7,978	17,025	1946	17,004	710	9,240	25,534

[1] Derived from published statistics on domestic pulpwood consumed in the United States and on exports of pulpwood. Data for 1941–46 based on domestic pulpwood received rather than consumed at United States mills.

[2] Including equivalent pulpwood volume of wood pulp and paper.

Source: 1924–39, American Paper and Pulp Association and American Pulpwood Association; 1941–46, Bureau of the Census and Forest Service.

Potential pulpwood requirements in 1955, under assumptions of full employment and adequate timber supply, are estimated at 29,000,000 cords, of which the equivalent of perhaps 9,000,000 may be imported. Looking further ahead, the upward trend is likely to continue, though at a reduced rate, and an increasing part of total pulpwood requirements must doubtless be supplied from domestic production.

Pulpwood production has long been a source of farm income in the North. It has assumed large proportions in the South with the phenomenal growth of the pulp and paper industry there in the past 15 years. It provides employment for some of the surplus farm labor which looms as a major economic and social problem in that region.

Other products.—Use of wood for fuel is likely to decline. On the other hand, the estimated potential requirement for all other wood products together—including veneer logs, hewn ties, round mine timbers, fence posts, poles, piling, cooperage, and shingles—is somewhat higher than present use.

Total.—Potential requirements for all timber products as of 1955, under the assumptions, are estimated at 15,000,000,000 cubic feet from trees of all sizes, including 61,000,000,000 board feet of saw timber. Looking further ahead, there are reasons to believe that potential requirements will not be lower than in 1955.

These estimates make no allowance for unpreventable losses from fire, insect and disease epidemics, and other natural causes. Nor do they allow any margin for export. Such factors widen the gap between potential requirements and prospective supply. On the other hand, several factors might tend to reduce the gap. Chief among these are reduction of waste and better utilization of existing supplies, better protection against fires, insects and diseases, and better management of privately owned forest land.

In the long run a sustained increase in our annual timber crop must be based on better management of the privately owned forest land which constitutes three-fourths of the commercial forest acreage. Until recently, privately owned forests have furnished more than 90 percent of the cut and they will continue to be the main source of supply. Three-fourths of the private commercial forest land, about 261,000,000 acres, is in more than 4,000,000 small properties, averaging only 62 acres each. About 71 percent of the cutting on this land, about half of which is farm woodland, is poor or destructive. Although generally in favorable locations, farm woodlands along with other small holdings present some difficult problems and are likely to lag in the application of good forestry. This is likely to hold down the income that farmers as a group might obtain from this source.

Naval stores

Harvesting of pine gum for the production of rosin and turpentine offers a chance to add to farm income in a belt along the South Atlantic and Gulf Coast States. The value of gum rosin and turpentine to producers for the year 1946–47 was about $34,000,000.

Before the war, annual production of gum naval stores ran about 500,000 units (1 unit=50 gallons of turpentine and 1,387 pounds of rosin). For 1946–47 it was 270,000. The wood naval stores industry, using pine stumps and pulp-mill waste rather than farm gum production, has expanded and now accounts for half of total output. But during the next 25 years the output of wood naval stores is expected to decline.

Should prewar exports of about half the total output be regained, as seems probable, there should be a continuing market for at least

500,000 units of gum naval stores. The supply of timber suitable for gum production seems sure to be adequate to yield such a crop.

AGRICULTURAL MARKETING COSTS

Marketing costs, including costs of transportation and processing as well as wholesale and retail distribution, usually account for over half the value of food products at retail. Their future level will depend on (1) cost rates and profits in marketing—particularly wages, (2) changes in the efficiency of marketing organization and operation, and (3) the kinds and quantities of marketing services rendered by middlemen. The broad program of marketing and utilization research now getting under way should increase marketing efficiency and assist in finding new outlets for farm products. Progress in these directions will reflect favorably upon the demand for farm products and farm returns. However, stable or rising wage rates and the long-time trend toward more marketing services will make it difficult to increase the farmers' percentage share of the retail dollar.

Increased marketing services in prospect

Development of agricultural marketing in the United States has been characterized by decided increases in the marketing services rendered by middlemen, with offsetting economies achieved through more efficient organization and operation. In some phases of marketing—notably in retailing—the recent tendency has been toward reduction of services to consumers, but this is not characteristic of marketing in an advancing economy. Some recent curtailments were war-induced measures to conserve manpower and materials. On the other hand, relatively full employment and high consumer incomes have increased the demands for such services as preparation of meals in eating places. The probable future trend is toward an increasing quantity and variety of marketing services. Intense competition among marketing agencies will accelerate the growth of these services. This trend will add to marketing costs, but it will be partly offset by improved marketing efficiency.

Labor costs in marketing farm products

Wages and salaries paid by marketing agencies have directly accounted for about half of the total marketing costs for farm food products during the 18 years 1929–46. This includes labor costs in transportation. The proportion of direct labor costs in total costs is about the same in the case of textile products. Pay rolls in food marketing have tended to make up an increasing proportion of total marketing costs in the last few years as the marketing bill has risen to higher levels, but pay rolls are not expected to constitute much more than half of total marketing costs during the next two or three decades.

The long-time trend in wage rates is upward. Downward adjustments in wage rates are strongly resisted and this contributes to the rigidity of marketing charges. Labor productivity has risen at least as rapidly as wage rates, however, except during general inflations. Once a fairly stable price level has been attained, no considerable increase in labor costs per unit of products marketed is probable.

Total marketing costs per unit of product tend to follow the changes in per unit labor cost. (See fig. 13.) If per unit labor costs are relatively stable, total marketing costs per unit probably will be relatively stable. Both labor costs and total marketing charges per unit of product are now about 50 percent above 1935–39 and will probably not return to the 1935–39 level for many years.

Profits in marketing farm products

Rates of profit on investment for marketing agencies appear to have been relatively high in 1946 and 1947. Profits probably will be adjusted downward within the next 2 or 3 years. Reduction of profit levels will reduce the price spread between farmers and consumers by only a relatively small amount. The rate and extent of reduction in profits will depend partly on the degree of competition that prevails and on circumstances that encourage new enterprises to enter the marketing field. In 1939, profits of agencies that market farm food products were estimated to have made up about 5 cents of the average consumer's food dollar, and accounted for less than 9 percent of total food-marketing charges. Profits in textile manufacture and marketing accounted for between 8 and 9 cents of the consumer's dollar in 1939, and made up between 9 and 10 percent of total marketing charges; and profits for tobacco marketing were slightly higher than for textiles.

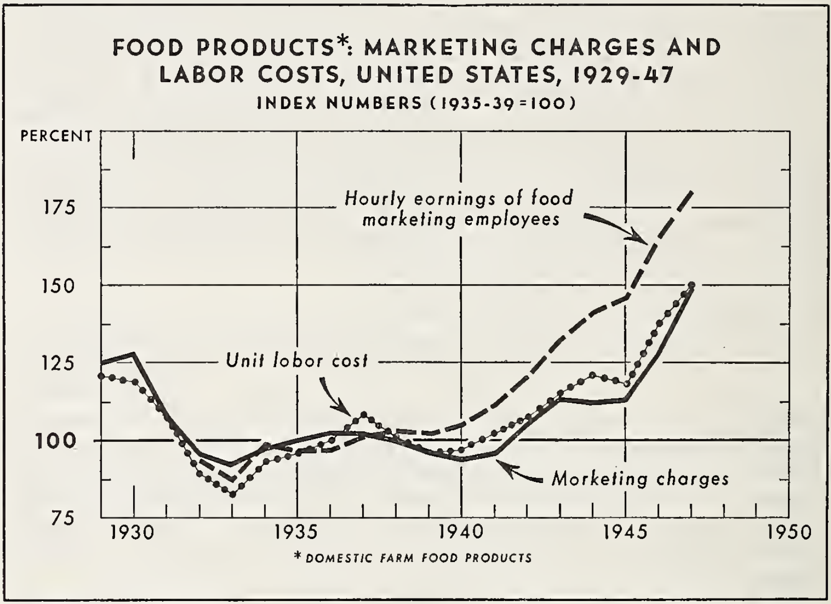

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FIGURE 13.—Wage rates are one of the most important elements in marketing costs. Over the last decade increases in labor efficiency have resulted in per-unit labor costs rising at a slower rate than actual hourly earnings of food-marketing employees. Unit labor costs and marketing charges have moved together.

Transportation costs

Transportation charges on farm food products, excluding short truck hauls and delivery services, were estimated to absorb 6.4 cents of the average retail food dollar in 1939, or about 10 percent of the total food-marketing charges. Since that date, both railroad and truck rates have increased substantially (mostly during 1947 and January 1948) because of higher costs of labor and material. The increase in transportation charges above 1939 levels has been proportionately less than the increase in total food-marketing charges, however, so the present share of food-marketing charges taken by transportation is somewhat less than in 1939.

Although freight charges have not increased so rapidly as retail food prices, the recent rise of freight rates threatens to create serious production and marketing problems. The increases were put in as emergency revenue measures, without detailed adjustment to the intricate competitive conditions that exist between producing areas for major markets and between competitive products. Numerous readjustments of individual, or small groups of rates are inevitable. In the long run, these readjustments, together with improved carrier facilities and more efficient operations, will have a tendency to lower the general rate level gradually from whatever peak is reached after the current trend of rising material and labor costs subsides.

There is a strong tendency to "tie" the rates of regulated for-hire motor carriers to the corresponding railroad rates, and the operating costs of commercial motor carriers appear to have increased about as much as railroad operating costs. But there may be some relief for agricultural products in the rapid increase of trucks on farms, and there is little doubt that they will continue to increase, particularly if commercial trucking rates remain high. With the further development of motortruck facilities, especially those of private and exempt for-hire carriers of agricultural products, it is probable that farm products will have more efficient hauling and at lower charges in the types of service that are especially adapted to trucking.

Marketing charges and farmer's share related to price levels in retail and farmers' markets

Charges for marketing as well as returns to farm producers are included in the retail price paid for farm products by consumers. Marketing margins are characteristically more stable than prices, and retail prices are relatively more stable than prices received by farmers. As retail prices rise, marketing charges increase at a slower rate and the farmer receives a larger share of the retail price (table17).

TABLE 17.—*Farm food products: Retail and farm values, marketing charges, and farmer's share of the consumer's dollar; also ratio of prices received to prices paid by farmers, selected periods, 1913–47*

Period	Retail value [1]	Farm value [1]	Marketing charges [1]	Farmer's share	Ratio of prices received by farmers to prices paid [2]
	Dollars	*Dollars*	*Dollars*	*Percent*	*Percent*
1913–14 average	268	124	144	46	100
1915–19 average	400	192	208	48	106
1920–24 average	444	182	262	41	86
1925–29 average	439	185	253	42	89
1930–34 average	326	115	209	35	66
1935–39 average	340	137	201	40	84
1940–44 average	396	190	209	48	103
1945	459	247	227	54	116
1946	528	282	255	53	120
1947 [3]	643	345	298	54	120

[1] Dollar values are for a family "market basket" containing quantities of farm food products equal to 1935–39 average annual purchases per family of 3 average consumers.

[2] Index of prices paid, including interest and taxes.

[3] Preliminary estimates.

From 1935–39 to 1947, farm prices of food products increased 152 percent, retail food prices 89 percent, and food-marketing charges 48 percent. If and when prices decline, marketing charges will fall less than retail prices and will contribute to a much sharper drop in farm prices.

The farmer's share of the consumer's dollar measures the percentage of the retail price that the farmer receives. The remainder of the consumer's dollar measures the percentage of retail price that is paid to marketing agencies for their services.

For all farm food products, the farmer's share of the retail food dollar usually ranges from 35 to 50 cents, with the remaining 50 to 65 cents measuring the share of the marketing agencies. The share averaged 40 cents in 1935–39. But the farmer's share for foods dropped as low as 32 cents in 1932 and reached a record high of 56 cents in early 1947. The farmer's share of the consumer's dollar spent for cotton (table 18), wool, and tobacco products averages much lower. It is usually near 10 cents, but varies from about 5 to 15 cents.

The farmer's share of the retail food dollar is closely related to the "parity ratio"—the ratio of prices received by farmers to prices paid by them—and this relationship (fig. 5 and table 17) provides a basis for estimating what farmers might expect under each of the alternative economic situations set forth in tables 1 and 4. Under the high-employment situation for 1955–65, the ratio of prices received to prices paid would average about 100 and the indicated farmer's share of the retail food dollar would be about 45 cents. Under the average level of the intermediate employment situation, the price ratio would be about 85 and the expected farmer's share would be about 40 to 42 cents. Under severe depression conditions, the price ratio would be about 67 and the indicated farmer's share would be about 34 to 36 cents—close to the depression low of 1932.

TABLE 18.—*Farmer's share of consumer's dollar spent for cotton clothing and home furnishing products, United States, 1927–47*

Year	Farmer's share	Year	Farmer's share
	Percent		*Percent*
1927	11.6	1938	7.8
1928	13.2	1939	8.3
1929	12.6	1940	9.0
1930	8.9	1941	11.8
1931	5.9	1942	12.7
1932	4.9	1943	12.7
1933	8.2	1944	12.3
1934	9.8	1945	12.0
1935	9.9	1946	12.6
1936	11.0	1947	12.5
1937	9.6		

A sustained intensive program of marketing research, service, and education by Federal and State agencies will stimulate increasing economies in marketing farm products and assist in finding new outlets for farm products. Progress in these directions will increase both the demand for farm products and farm returns. At the same time, however, the long-time trends toward rising wage rates and more marketing services are expected to continue so that the reduction of over-all marketing charges will be a difficult task.

Comparisons among farm products

The farmer's share of the retail price is higher for meats, poultry and eggs, and dairy products than for other groups of foods and nonfoods, and marketing charges take a correspondingly lower share. Differences among commodities are the result of many factors, including degree of processing, distance of transportation, perishability, and relative cost of farm production. Shares to farmers for all groups have varied widely during the 35 years 1913–47, as shown by the estimates summarized in table 19.

The farmer's percentage share of the retail dollar spent for poultry and eggs was the most stable; it was only 11 percent higher in 1947 than in 1932. For most other commodity groups the farmers' share of the retail dollar in 1947 was 50 to 100 percent larger than in 1932.

TABLE 19.—*Retail cost, farm value, marketing charges, and the farmer's share of retail cost, for prewar annual average purchases per family of farm food products and cotton products, selected periods, 1913–47*

Commodity, group, and year	Retail cost	Net farm value	Marketing charges	Farmer's share
Meat products:				*Percent*
1913	$63.27	$41.46	$21.81	66
1929	110.43	58.87	51.56	53
1932	65.92	25.58	40.34	39
1935–39 average	88.09	46.35	40.65	53
1947 [1]	184.68	131.48	53.20	71
Dairy products:				
1913	57.48	28.96	28.52	50
1929	85.59	45.19	40.40	53
1932	57.27	24.84	32.43	43
1935–39 average	67.27	33.47	33.80	50
1947 [1]	121.57	73.71	47.86	61
Poultry and eggs:				
1913	23.56	16.17	7.39	69
1929	40.10	26.43	13.67	66
1932	22.12	13.56	8.56	61
1935–39 average	26.47	17.56	8.91	66
1947 [1]	51.85	35.40	16.45	68
Bakery products:				
1913	------	------	------	------
1929	------	------	------	------
1932	------	------	------	------
1935–39 average	36.63	5.41	30.94	16
1947 [1]	53.30	14.21	39.09	27
Other cereal products:				
1913	13.72	5.59	8.13	41
1929	22.09	7.26	14.83	33
1932	14.71	2.86	11.85	19
1935–39 average	18.46	5.98	12.10	34
1947 [1]	35.59	15.58	20.01	44
Fresh fruits and vegetables:				
1913	------	------	------	------
1929	80.11	27.28	52.83	34
1932	52.77	16.07	36.70	30
1935–39 average	57.64	20.30	37.34	35
1947 [1]	107.78	50.21	57.57	47
Canned fruits and vegetables:				
1913	------	------	------	------
1929	17.90	2.63	15.27	15
1932	12.93	1.62	11.31	13
1935–39 average	14.14	1.92	12.22	14
1947 [1]	23.35	4.73	18.62	20
Cotton products:				
1913	------	------	------	------
1929	29.65	3.74	25.91	13
1932	22.52	1.10	21.42	5
1935–39 average	23.80	2.23	21.57	9
1947 [2]	59.37	7.15	52.22	12

[1] Preliminary.

[2] Average of first 6 months.

FARM SIZES AND OWNERSHIP

The change in total number of farms has been relatively small in recent decades, but striking changes have occurred among the different classes of farms. Mechanization and a wide variety of technological developments have resulted in a trend toward larger and fewer commercial farms; while the growing importance of rural living and part-time farming operations has increased the number of small, generally noncommercial farms.

These two major trends are expected to continue. Fewer workers will be needed in full-time farming as mechanization and other improvements increase the size of farm which can be handled by a farm family. This will mean fewer and larger full-time farms. On the other hand, growing industrialization and improvements in transportation and in rural home facilities point to an increase in part-time farming and rural living.

There is likely to be some increase in the number of large-scale commercial farms. The family farm, however, seems likely to remain the prevailing business unit in United States agriculture.

Broad groups of farms

Farms in the United States may be divided into three broad groups: large-scale units, commercial family farms, and small-scale farms. Large-scale units were defined primarily as the farms that reported a gross value of products of $20,000 or more in the 1945 census, with some adjustments for cases where incomes might be low because of crop failure or other reasons. Commercial family farms were those whose gross value of products ranged from $1,200 to $20,000, with similar adjustments for crop failure, or for production that was either abnormally low or abnormally high in relation to the value of land and buildings. Farms with value of products below $1,200 were classified primarily as small-scale farms. They contribute little to commercial agricultural production.

Most of the large-scale units represent a size of business requiring the employment of considerable hired labor. The scale of operations and employment relationships are not characteristic of those usually found on commercial family farms. The farm operator spends much of his time supervising hired workers and on other management problems. Such farms are not numerous. They represent less than 2 percent of the farms and about 4 percent of the farm population, but they account for over one-fifth of the total production (table 20). Large-scale units are particularly important in the 11 Western States. Many of the large farms in this region are livestock ranches, large-scale wheat farms, or large specialized fruit or vegetable farms.

TABLE 20.—*Percentage of farms, farm population, farm acreage, and value of farm products, by economic class, United States, 1945* [1]

Class	Number of farms	Farm population	Farm acreage	Gross value of farm production	Value of farm products sold
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
I. Large-scale units	1.7	3.7	25.8	22.0	24.2
II. Large family farms	7.0	8.5	18.3	23.5	25.1
III. Medium family farms	20.0	21.3	24.1	30.0	30.5
IV. Small family farms	28.4	28.5	18.1	17.1	15.4
V. Part-time farms	10.3	10.9	2.3	1.9	.9
VI. Small holdings	15.8	14.0	5.8	4.2	3.0
VII. Nominal units	16.8	13.1	5.6	1.4	.7

[1] Special Report on the 1945 Sample Census of Agriculture. Roman numerals in this table correspond with class numbers in the definitions on pp. 15 and 16 of the Sample Census, and in table 29 beginning on p. 120.

TABLE 21.—*Number and important characteristics of farms by economic class, United States, 1945* [1]

Class	Number of farms	Average per farm [2]				
		Harvested cropland	All land	Value of land and buildings	Value of implements and machinery	Gross value of products
	Thousands	*Acres*	*Acres*			
I. Large-scale units	102.1	384	2,905	$78,422	$6,542	$39,203
II. Large family farms	408.9	193	514	26,067	3,021	10,484
III. Medium family farms	1,173.0	104	236	11,135	1,616	4,658
IV. Small family farms	1,661.9	46	125	5,117	595	1,874
V. Part-time farms	602.2	10	43	2,585	209	574
VI. Small holdings	923.5	22	72	2,305	204	825
VII. Nominal units	987.3	11	65	3,583	176	264

[1] Special Report on the 1945 Sample Census of Agriculture, pp. 15–16 and 120–159.
[2] Average of all farms in each class.

Commercial family farms represent the bulk of the farms in this country, both from the standpoint of the number of farms and the amount of production involved. They account for approximately 55 percent of the farms and 70 percent of the value of production.

They are divided into three size groups. The large family farms had a value of products ranging generally from $8,000 to $19,999; the medium family farms from $3,000 to $7,999; and the small family farms from $1,200 to $2,999. The medium and large family farms are now more important than the small family farms in the northern and western parts of the country, where technological developments have been most rapid. Small family farms predominate in the South where mechanization is less advanced and where cotton and tobacco are dominant cash crops. The reporting of each cropper unit as a separate farm by the census is also of importance in explaining the relatively large number of small family farms in the South.

About 2½ million units fall in the groups of small-scale farms. In general, they had a gross value of products of less than $1,200 as reported in the 1945 census. These small-scale farms contributed less than 8 percent of the total value of agricultural production as reported in the 1945 census and less than 5 percent of the value of products sold. Many of them are operated by part-time farmers, or they are residential or other nominal units.

The group designated as part-time farms represents roughly the group of farm operators who have a significant income from both farm and nonfarm work but whose farm business is small in comparison to the commercial family farms. These farmers live on farms having a value of products from $250 to $1,200 in 1944 and reported work off the farms of 100 days or more. The effect of this nonfarm income is reflected in a somewhat higher proportion of these farmers with modern facilities than for other small-scale farms. Substantial differences in the facilities on part-time farms exist between regions. For example, in the South less than one-half of the part-time farms have electricity compared with over two-thirds of the part-time farms in the rest of the country.

Nearly 1,000,000 farms were classed as nominal units. These farms represent for the most part residential homes and retirement units with 3 acres or more of land. More than a quarter of a million farm operators over 64 years old were included in this group. They also include country estates and other farms not conveniently grouped in other categories, and farms which for any reason had a low value of products reported.

There remains a substantial residue of small-scale farms on which the operator apparently derives his main source of income from the farm. Farms having a value of products from $500 to $1,200 and on which the operator does not work more than 100 days off the farm have been designated as small holdings.

Both the small-family farms and the small holdings are characterized by low acreage of cropland, little machinery, small investments, and consequently by low output per worker. The average value of machinery per farm, for example, averaged only $204 on small holdings and $595 on small farms compared with $3,021 on large-family farms. Crop acreage averaged 22 acres on small holdings and 46 acres on small-family farms, compared with 193 acres on the large-family farms (table 21).

Many of the people living on small holdings and even on small-family farms lack modern facilities which go to make farm life more enjoyable. Over 40 percent of the farm people fall in these groups. Only about one family in seven on small holdings has running water (see table 26, page 70). Only two families out of nine on small-family farms have running water. Only slightly over one-fourth of the families on small holdings and two-fifths of the families on small-family farms have electricity. The low gross value of the product, ranging from an average of $825 for small holdings to an average of $1,874 for small-family farms, has not permitted them to incorporate these facilities into their levels of living. Apparently, farms need to be larger than even the small-family farms if they are to provide sufficient earnings for farm families to buy these conveniences.

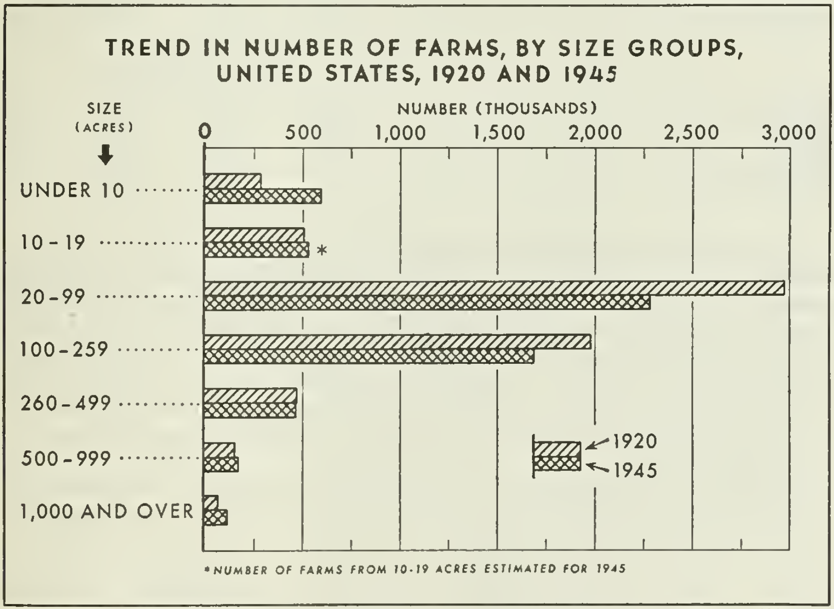
Trends in number of farms, by size groups

Changes in the number of farms by size groups are difficult to measure accurately. The economic classification of farms would be a good measure, but it is available only for 1945. The acreage of all land in the farm is the best available measure, but it is defective in several respects. For example, a 200-acre farm in north-central Iowa represents a vastly different size of operation than one of 200 acres in western North Dakota.

In summary, the changes in numbers of farms by size groups from 1920 to 1945 show a doubling of very small or nominal farms, an increase of two-thirds in farms of 1,000 acres and over, some increase in the number of farms of 500–999 acres, and much more than offsetting decreases in the small and middle scale size groups (fig. 14). These changes resulted in a 9-percent decrease in the total number of farms; also a 32-percent increase in the average acreage of all farms, which increased from 148 acres to 195 acres during the period.

At the upper end of the size-of-farm scale, there was an increase in the number of farms during this period. Although the group of farms of 1,000 acres and over in size was two-thirds larger than in 1920, that group still contained less than 2 percent of the total number of farms in 1945. Operators of farms of that size, however, controlled about 40 percent of the total land in farms. This seems like a rapid trend toward concentration of land holdings until we analyze the data more closely. These farms included only 13 percent of the total harvested cropland. About 87 percent of the number of farms of 1,000 acres or over were found in the 17 Western States. This means that the increase took place largely in the ranching and dry-land wheat areas where 1,000 acres is not a large-scale farm.

The technological factors responsible for a large part of the production increases of recent years have had a considerable influence on the number and sizes of commercial farms. Increases in size have been most directly related to mechanization and other technological developments within the main stream of commercial family farms.



U. S. DEPARTMENT OF AGRICULTURE NEG. 46622-X BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 14.—Since 1920, there have been substantial decreases in the number of medium-size farms, partly offset by increases both in very small farms and large farms. These trends result from the increasing number of rural residences or part-time farms and the steady mechanization of family-size commercial farms.

The numbers of small-scale farms have been affected by the very considerable growth in the number of part-time farmers and by city workers establishing homes in rural areas. Technological developments, especially in transportation, have also influenced these changes.

Change in tenure

Only about a third of all farms in 1945 were operated by tenants, as contrasted with nearly two-fifths in 1920 (table 22). Tenancy continued to increase in the decade following 1920, but by 1940 the percentage of tenancy was back to about 1920 levels. And a very considerable decrease between 1940 and 1945 resulted in the lowest level of tenancy since before 1900.

A part of the changes in tenancy reported by the census is explained by the changes in numbers of share croppers. Since 1930, these numbers have been decreasing and are now down to less than 450,000. Increased mechanization in cotton production will probably lead to further declines in the number of share croppers.

Although the number of full owners increased nearly 15 percent from 1930 to 1945, nearly all of the increase in the number of full owners was on farms under 50 acres in size.

TABLE 22.—*Number and percent of farm operators by tenure, United States, 1920–45*

Tenure	1920	1930	1940	1945
	Number (thousands)			
All operators	6,448	6,289	6,097	5,859
	Percent of all operators			
Full owners	52.2	46.3	50.6	56.3
Part owners	8.7	10.4	10.1	11.3
Managers	1.0	.9	.6	.7
Croppers	8.7	12.4	8.9	7.6
Other tenants	29.4	30.0	29.8	24.1

In contrast to the long-term increase in numbers of full owners on small farms, the increase in numbers of part owners has been on large farms. The number of part-owner operated farms increased nearly one-fifth from 1920 to 1945, and the acres of land they operated more than doubled. The greater number of part-owner farms is one explanation of how many farms have become larger. Farmers who owned some land have rented adjoining farms or separate tracts of land that could be combined with their own land for operation as a more efficient unit.

The over-all mortgage-debt situation indicates that farmers have also increased their equity in the land they own. Total mortgage debt is only about half as large as in 1920. But 1947 figures indicate an upward turn in mortgage debts. And one of the blind spots in the picture is whether there are large numbers of new owners who have bought farms on credit at inflated values, and, therefore, will find themselves vulnerable in periods of lower farm income.

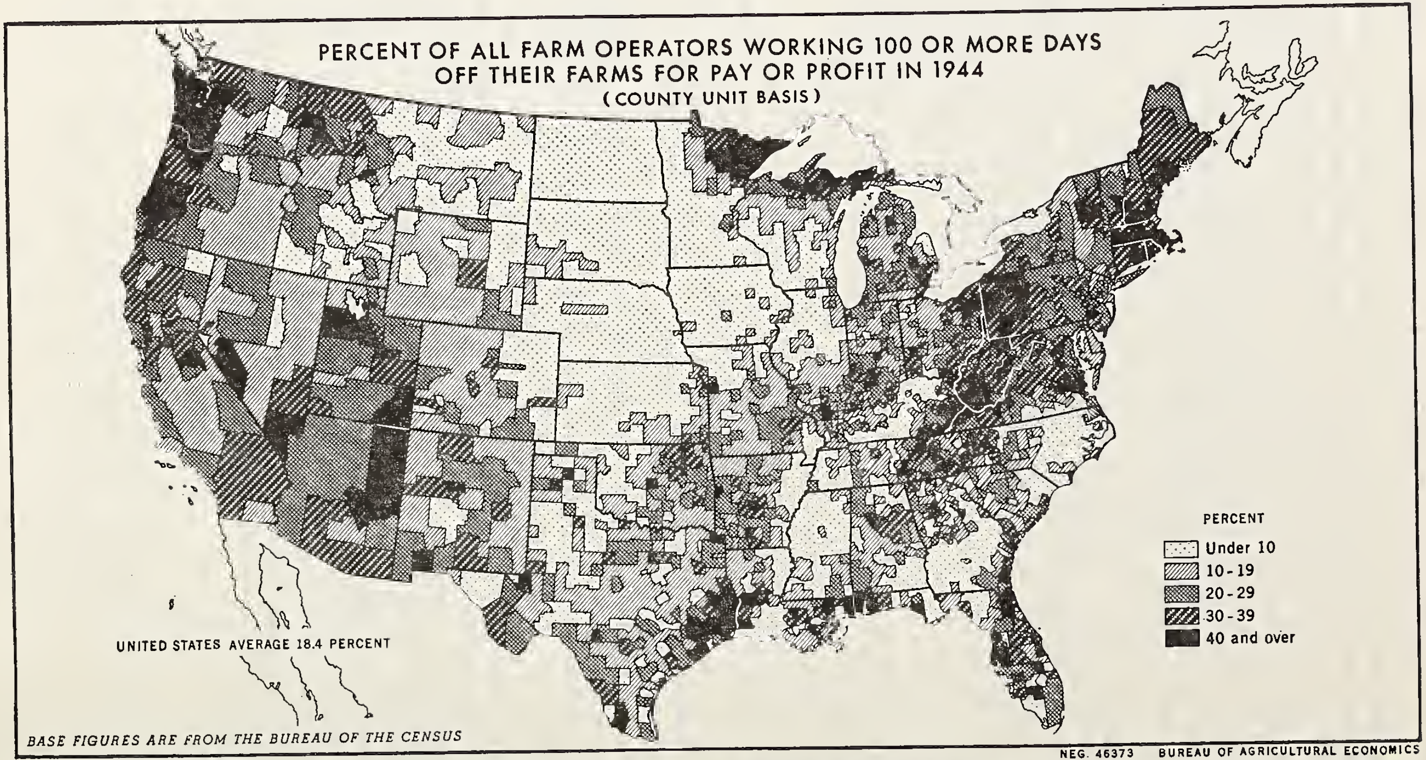
PART-TIME FARMING AND OPPORTUNITIES FOR OFF-FARM EMPLOYMENT

The high rate of natural increase on farms and decreasing requirements for manpower in agriculture will make off-farm employment desirable for many farm people. Under prosperous conditions, a steady stream of farm-to-city migration is expected and the location of these new nonfarm people becomes of considerable interest. Opportunities for part-time farming as well as production of some of the more perishable agricultural products usually follow industrialization. Actually, manufacturing employment has been increasing faster than the national average rate, both in the South and on the Pacific coast.

A century and a half ago nine-tenths of the American labor force worked on farms. Today, hardly one-sixth of the labor force is so employed, and an even smaller percentage works "full time" on farms. This extreme contrast is the outcome of gradual specialization of labor and improvements in technology, which have not only reduced the hours of labor but also have (1) shifted many jobs formerly done on farms to cities and villages, and (2) released labor to produce new goods and services not previously available at all. Food packing and processing have largely moved to town, and most of the labor formerly devoted to producing feed for horses and mules is now in town producing farm tractors. Labor on the ice pond is now in town making refrigerators, and the radio is one of thousands of goods and services produced in town that were formerly produced nowhere

This increasing relative importance of nonfarm employment or job opportunities will continue throughout the next generation, with an accompanying expansion of the proportion of farms operated on a part-time basis. Formerly, most labor on farms was full time in the sense that its income was derived largely or wholly from work done on the farm. Today a substantial proportion of the labor force living on farms derives an important part of its income from nonfarm employment. This is indicated by data of the Bureau of the Census showing farmers who worked 100 or more days off the farm in 1944.

In that year, 18.4 percent of all farm operators in the United States reported that they worked more than 100 days off the farm. In some areas the percentage was much higher. More than a third of the farmers in New England, the Middle Atlantic, and the Pacific States were part time. Over 40 percent of the farm operators in Massachusetts and Washington; more than half in some counties around Puget Sound, along the Columbia River, in eastern Kentucky, and in northeastern Ohio; and 60 percent in 11 counties of southeast Texas, were part-time farmers. A number of other areas also had high percentages of part-time farmers (see fig. 15). In marked contrast to these areas, only 6 percent of the farm operators in Iowa and 3 percent in North Dakota worked 100 or more days off their farms in 1944.


PERCENT OF ALL FARM OPERATORS WORKING 100 OR MORE DAYS
OFF THEIR FARMS FOR PAY OR PROFIT IN 1944
(COUNTY UNIT BASIS)
PERCENT
Under 10
10-19
20-29
30-39
40 and over
UNITED STATES AVERAGE 18.4 PERCENT
BASE FIGURES ARE FROM THE BUREAU OF THE CENSUS

U. S DEPARTMENT OF AGRICULTURE NEG. 46373 BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 15.—In a large number of areas as many as 40 percent or more of the farmers are classed as part-time operators. Considerable nonfarm employment is in such occupations as mining, manufacturing, lumbering, and oil production, but part-time farm operators also work at service, clerical, and professional jobs, and some of them work on other farms or ranches. In 1944 there were many part-time farms near war-production centers.

It is of some significance to agriculture to know the probable geographical location of future jobs, as the total American labor force expands and as nonfarm employment increases relative to farm employment. There is no evidence to suggest the probability of a widespread geographic shift of nonfarm employment opportunities from existing concentrations in the Northeast and in the Great Lakes region; nor is there evidence that the absolute number of such opportunities in these regions will not increase. But there are good reasons for believing that future expansion could be relatively greater in some of the more rural regions—regions in which urbanization and industrialization are now less fully developed.

One reason is found in the facts of past change. From 1899 to 1939 total manufacturing wage earners in the United States increased by 3.6 million, or about 77 percent, and there were significant changes in their regional distribution. Whereas New England and the Middle Atlantic States accounted for about 52.2 percent of the total in 1899, the proportion in these regions had declined to 39.9 percent in 1939. While this was happening, the number in the east-north-central region increased from 22.8 to 27.5 percent, the number in the three southern regions increased from 15.9 to 20.9 percent, and the number on the Pacific coast from 2.6 to 5.5 percent (table 23).

From 1940 to 1946 the earlier changes in relative position of regions were generally continued. For example, the Middle Atlantic States paid out 30.4 percent of all manufacturing wages and salaries in 1940, but by 1946 the proportion had declined to 29.4 percent. The Pacific Coast States, on the other hand, rose from 6.6 percent to 7.9 percent; and all southern regions showed increases.

Table 23.—*Regional distribution of wage earners and wage and salary payments in manufacturing, United States, selected years, 1899 to 1946*

Region	1899	1909	1919	1929	1939	1940	1946
	Number of wage earners (thousands)					Wage and salary payments (million dollars)	
United States	4,713	6,615	9,096	8,828	8,340	15,200	35,700
	Percent of United States total						
New England	18.1	16.6	14.9	12.4	11.6	10.6	10.2
Middle Atlantic	34.1	33.4	31.6	29.0	28.3	30.4	29.4
East North Central	22.8	22.9	26.3	28.8	27.5	32.4	31.3
West North Central	5.6	5.7	5.5	5.4	5.2	4.8	5.1
South Atlantic	9.7	10.0	9.0	10.3	12.7	8.4	8.5
East South Central	3.8	4.0	3.6	4.3	4.7	3.0	3.5
West South Central	2.4	3.1	3.1	3.4	3.5	2.9	3.3
Mountain	.9	1.1	1.2	1.2	1.0	.9	.9
Pacific	2.6	3.2	4.8	5.2	5.5	6.6	7.9

Note.—Data on wage earners from Changes in Distribution of Manufacturing Wage Earners, Bureau of Census and Bureau of Agricultural Economics, 1942, pp. 24–25. Wage and salary payments computed from Survey of Current Business, U. S. Department of Commerce, August 1947, pp. 11 and 14.

The growing relative importance of nonfarm job opportunities outside the regions of existing concentration means two things to farm people: (1) That the production of perishables such as vegetables, poultry, and dairy products, is likely to follow industrialization into the areas of new growth, and (2) that more farm people will have access to nonfarm employment without having to move great distances, or perhaps without even having to leave their present farm homes.

The possibility of increasing numbers of farm people finding nonfarm work without leaving home raises the difficult question as to what is happening or is likely to happen to the size of urban centers within regions. Are small cities and villages growing relatively more than large cities? Is manufacturing spreading over the countryside? In other words, is nonfarm employment becoming more diffused within counties, States, and regions?

Evidence on this point is inconclusive. A study of trends in the distribution of manufacturing employment from 1899 to 1929, by size of community, disclosed that, with the exception of the South Atlantic States, the proportion of wage jobs located in the more sparsely settled areas had declined somewhat. On the other hand, with the exception of New England, the proportion of wage jobs located in the principal cities of industrial areas also declined. Therefore, the greatest growth was in the periphery of industrial areas; that is, the bigger cities spread out.

It is obvious, however, that even without a change in the distribution of wage jobs as between large cities, small cities, villages, and the open country, increasing industrialization in any region makes nonfarm employment more accessible to the farm people of the region. It does so because the growth of any large industrial center is likely to bring with it the establishment in the same area of smaller centers of employment or clusters of wage jobs around satellite industries. New England, an old and highly industrialized region, is a conspicuous example.

Thus, as nonfarm employment in the Nation as a whole expands, relative to farm employment, it is probable that the number of farm residents working off the farm will increase; also, if nonfarm employment expands most rapidly in the South and West, part-time farming will grow most rapidly in those regions. Nevertheless, the growth of part-time farming in any area will vary according to the character of the farm land of the area. For example, the farms of the Connecticut River Valley have tended to remain more predominantly full-time farms than those of the Connecticut hills.

RURAL LEVELS OF LIVING AND RURAL ORGANIZATION

The level of living of a farm family is its final measure of success or failure in getting what it wants from agriculture. Its level of living includes not only the things it buys with its own income but also the public facilities provided in the community in which it lives. If the nonfarm economy is reasonably prosperous, farm family levels of living will be considerably higher than before World War II and will continue to improve. Organizations serving farm people are becoming both more numerous and more specialized.

Measured by such data as are available, farm family levels of living have improved considerably over the last 25 years. The percentages of farm homes with electricity, radios, telephones, and running water and of farm families owning automobiles have steadily grown. The number of rooms per dwelling has increased, the number of persons per room in dwelling units has decreased, and the refrigeration equipment owned by farmers has shown improvement during the period in which data on these items have been available.

Table 24 presents the longest-time measure available of the improvement in farm families' levels of living. Disregarding the percentage of farm homes located on all-weather roads, which is adequately reflected in the increased ownership of automobiles, it is evident that the most rapid improvements are in electrification and the ownership of automobiles and radios; the least rapid in telephones and running water in farm homes.

TABLE 24.—*Percentage of farm operators reporting specified family living items, United States, 1920–45*

Item	Percentage reporting			
	1920	1930	1940	1945
	Percent	*Percent*	*Percent*	*Percent*
Radio		21	60	73
Automobile	31	58	58	62
All-weather road		24	49	64
Electricity	7	13	33	48
Telephone	39	34	25	32
Running water	10	16	18	29

Farm family levels of living are not equal in all areas or for all classes and types of farms. As measured by four significant items, an index of farm-operator family level of living, for each county in the United States, is recorded in figure 16. This index is based upon the average value of products per farm, and the respective percentages of farm operators in the county who have automobiles, electricity, and telephones.

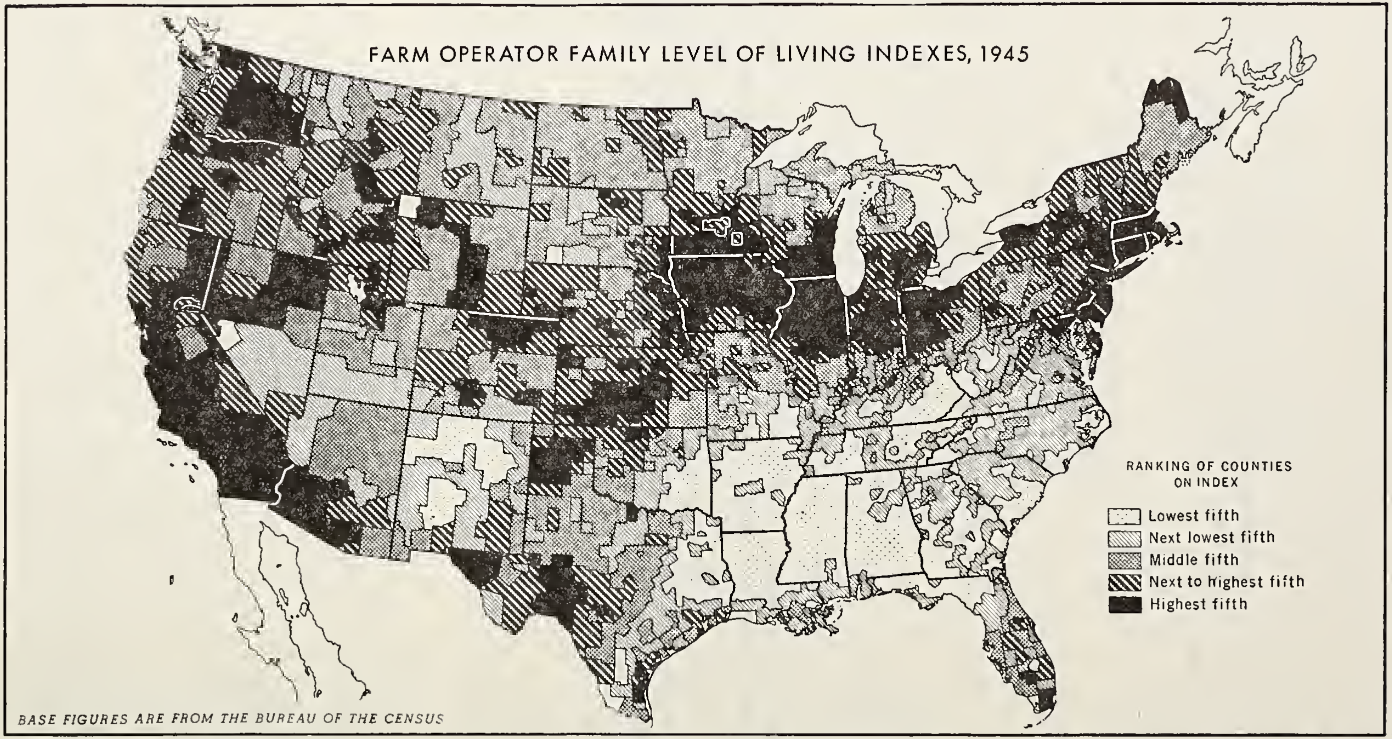

FARM OPERATOR FAMILY LEVEL OF LIVING INDEXES, 1945
RANKING OF COUNTIES ON INDEX
Lowest fifth
Next lowest fifth
Middle fifth
Next to highest fifth
Highest fifth
BASE FIGURES ARE FROM THE BUREAU OF THE CENSUS

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FIGURE 16.—There are wide differences in the average levels of living of farm people over the United States as indicated by the county indexes shown above. These indexes reflect differences in the proportion of farms having automobiles, electricity, and telephones, as well as relative levels of farm income.

Farm operators in the heart of the Corn Belt, in the industrial States on the northeast seaboard, in California, and in some wheat areas, have the highest levels of living. But when interpreting the map it should be kept in mind that only farm operators, and no farm laborers, are included in the data; also that share croppers are counted as operators in the South. If farm-laborer families were included they would not greatly alter the level-of-living index in the Corn Belt because farms in that region are largely family operated; nor would they greatly alter the index for some of the Wheat Belt. But they would lower the indexes for some areas in the Pacific States, on the northeast seaboard, and in the Southwest.

Table 25 summarizes these same level-of-living indexes for each major geographical division in 1930, 1940, and 1945. Except for the West North Central division, where severe drought contributed to a net decrease in the index value, slight to moderate increases occurred in all divisions between 1930 and 1940. Nationally, the increase averaged about 7 percent. In the 5 years 1940 to 1945, however, the national average level increased nearly 25 percent. The greatest absolute increases were in the Pacific, West North Central, and Middle Atlantic regions. In all three of these regions, farm operators had good incomes from 1940 to 1945.

TABLE 25.—*Farm operator family level of living indexes, 1930, 1940, and 1945*

[1930 United States average=100]

Area	1930	1940	1945
United States	100	107	133
New England	141	153	183
Middle Atlantic	133	152	185
East North Central	133	145	175
West North Central	143	133	167
South Atlantic	56	65	87
East South Central	45	47	64
West South Central	76	83	108
Mountain	111	121	151
Pacific	148	161	200

Source: Indexes for 1940 and 1945 are previously published BAE indexes adjusted to a 1930 base. Indexes for 1930 have not been previously published, but were computed by methods almost identical with those used for 1940 and 1945.

Of the four items combined to form these indices the possession of automobiles contributes most to the average index value, followed by electricity, telephones, and gross value of farm products. In the improvement that took place nationally between 1940 and 1945, the value of farm products contributed most, followed closely by electricity and then telephones. Increase in the possession of automobiles contributed very little because few new automobiles were on the market during the period.

By and large, the differentials in levels of living are in favor of those who operate the larger farms. There are two modifications of this broad general tendency, however; families on smaller economic-sized farms in some parts of the country have higher levels of living than those on larger farms elsewhere; and families who earn additional income off the farm have higher levels of living than those on farms of the same size who depend almost altogether on farm income.

Table 26 gives data on five facilities, four of which—automobiles, electricity, telephones, and running water—are of great importance in farm-family living. The two items which are most consistently relatively high on all types of farms are automobiles and electricity. Only the two groups of larger farms had running water in 50 percent of the homes. Part-time farmers who have incomes from other sources have higher levels of living than do farmers who operate small holdings.

TABLE 26.—*Percent of farms reporting specified facilities, by economic class, United States, 1945* [1]

Economic class	Percent of farms reporting				
	Tractors	Automobiles	Electricity	Telephones	Running water
I. Large-scale units	86	91	80	72	76
II. Large family farms	86	91	76	67	58
III. Medium family farms	69	84	62	50	38
IV. Small family farms	30	62	41	26	22
V. Part-time farms	14	65	58	26	35
VI. Small holdings	9	39	28	15	13
VII. Nominal units	9	43	41	21	24
All farms	34	62	48	32	29

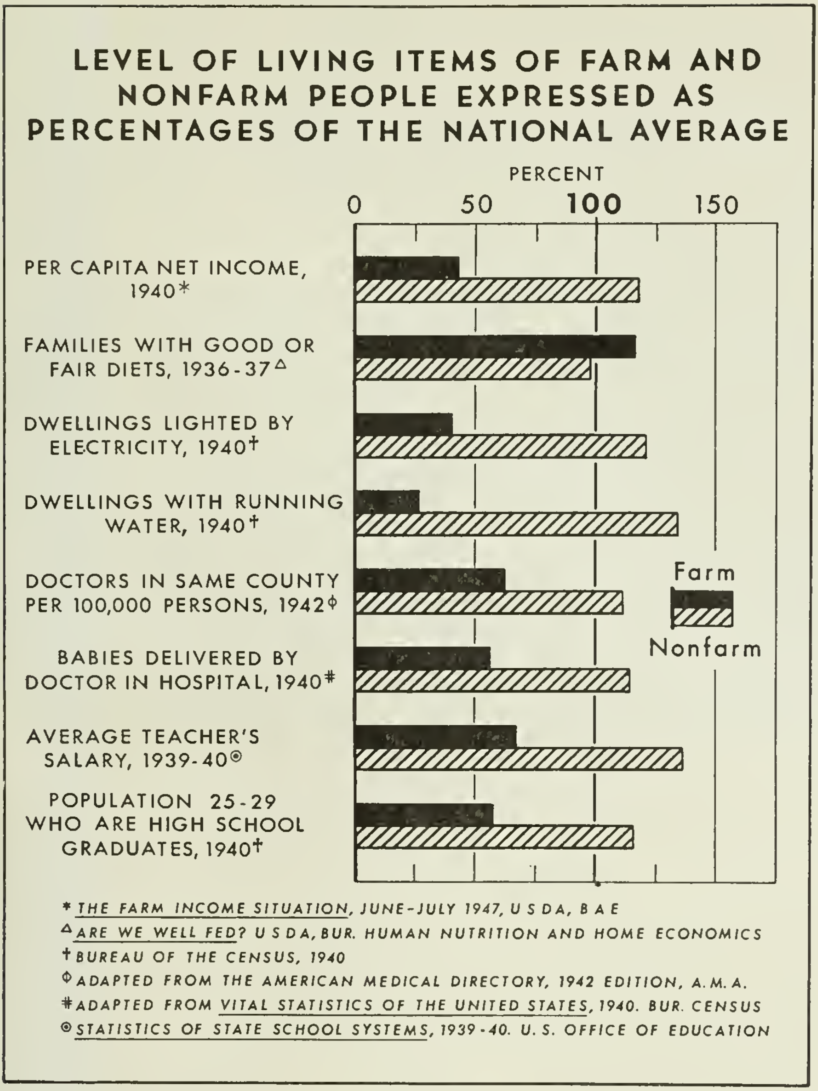
[1] Special Report on the 1945 Sample Census of Agriculture, table 29, p. 121.

Even though farm-family levels of living have improved steadily over the last 25 years and the improvement has been pronounced during recent years of good farm incomes, the improvement has not yet raised the farm level to a parity with the urban level. If a high level of employment prevails during the next 25 years, the per capita incomes of farm people from agriculture will be closer to per capita nonfarm incomes than they were before the war. Maintenance of farm incomes relative to nonfarm incomes would raise rural levels of living much closer to those prevailing in urban areas.

Some goods and services that are almost universally available to urban families are not yet available to the vast majority of farm families even with their recent higher incomes. Notable among these are health, medical, educational, and welfare services. Farm families are below parity also in housing and in schools and libraries and in spite of rapid rural electrification they are still below parity in household equipment and conveniences.

Figure 17 gives a general comparison of some of the significant items in farm and urban levels of living. All differences shown in the chart result either from the disparity between the purchasing power of farm and of urban families, or disparity between services and facilities made available through expenditures by urban and by rural communities and governments.

To obtain consistency, data were selected for 1940 or the nearest year to it that was available, since 1945 estimates were not available for some of the items. Even so, some of the estimates are based on scanty data, some figures compare situations in rural and urban communities, some are per family and some are per person. Nevertheless, the chart does give a good general idea of the differences between farm and nonfarm levels of living, and despite the changes which have occurred since 1940, most of these differences still exist.


LEVEL OF LIVING ITEMS OF FARM AND NONFARM PEOPLE EXPRESSED AS PERCENTAGES OF THE NATIONAL AVERAGE

* *THE FARM INCOME SITUATION*, JUNE-JULY 1947, U S DA, B A E
△ *ARE WE WELL FED?* U S DA, BUR. HUMAN NUTRITION AND HOME ECONOMICS
† BUREAU OF THE CENSUS, 1940
Φ ADAPTED FROM THE AMERICAN MEDICAL DIRECTORY, 1942 EDITION, A. M. A.
# ADAPTED FROM *VITAL STATISTICS OF THE UNITED STATES*, 1940. BUR. CENSUS
◎ *STATISTICS OF STATE SCHOOL SYSTEMS*, 1939-40. U. S. OFFICE OF EDUCATION

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FIGURE 17.—Average prewar differences in several level of living items for farm and nonfarm people are shown above. Farm incomes have since improved and the number of farms with electricity has shown a sharp increase, but farm levels of living over wide areas are still below the nonfarm level.

Farm incomes have improved relative to nonfarm incomes since 1940, but the average per capita income of farm people from all sources was still only 55 percent of the average per capita income of nonfarm people for 1945. Other data for 1945 indicate that rural areas still had only 1 doctor for every 1,125 persons whereas the cities had 1 doctor for every 630 persons. Rural areas had only 1 dentist for every 2,860 persons whereas cities had 1 dentist for every 523 persons. Only 28 percent of the rural homes, but about 95 percent of urban homes, had running water in 1945. The greatest progress in the last few years has been made in electrification. About 48 percent of farm homes were electrified in 1945 as compared with 33 percent in 1940, but this is still below the 96 percent of urban homes reporting electric lights in 1940.

Such evidence as was available in 1937 indicated that good or fair diets were somewhat more common among farm families than among urban families. It is not certain whether this is still the case. But average per capita consumption of food has increased substantially among both farm and nonfarm people since 1937 and diets have improved among both groups.

The number of organizations and agencies serving farm people has steadily increased with the increasing complexity of American agriculture. The nature and types of these organizations have become more specialized with the increasing need for organized activities. There is a continuing movement of several institutions, such as schools and churches, from the open country into villages and towns. State and Federal agencies that were not in existence a few decades ago are now serving farmers, and practically all of them require farmer participation in voluntary organizations, through which to operate and serve effectively. Producers' farm supply or marketing cooperatives, agricultural conservation associations, soil-conservation districts, rural electrification cooperatives, general farm organizations, and agricultural extension services are found in most counties throughout the United States. Because local governments (counties) are administrative and operating units for practically all Federal and State programs, and because county governments have taken over from townships and districts a number of other activities, county agencies and county governments are growing increasingly important.

O